

Response to EPA General Notice of Potential Liability, Yosemite Creek Sediment Superfund Site, San Francisco County California

RWD Associates, LLC

**1205, 1301, 1375 and 1335-1339 Yosemite Avenue
1296, 1320, and 1340 Armstrong Avenue
San Francisco, California 94212**

January 10, 2014

Project: 13-167

Prepared for:

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January 10, 2014

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**Re: Yosemite Creek Sediment Superfund Site - Report in Response to
EPA General Notice of Liability**

Dear Ms. Tennis:

This firm is counsel to RWD Associates, LLC ("RWD") with respect to the Yosemite Creek Sediment Superfund Site ("Superfund Site"). We are pleased to submit the enclosed report on RWD's behalf.

RWD is the second-generation owner of 1205, 1301, 1375 and 1335-1339 Yosemite Avenue and 1296, 1320, and 1340 Armstrong Avenue in San Francisco, California ("Subject Property"). RWD's predecessor purchased the Subject Property in the 1950s and operated a wholesale lumber storage yard onsite. In the 1980s, portions of the Subject Property were leased to light industrial businesses, some of which continue to operate today.

This office retained Waterstone Environmental ("Waterstone") to conduct an extensive review of the information available regarding the Subject Property, the Superfund Site, and other nearby properties and industrial uses. After undertaking an exhaustive analysis, Waterstone prepared the enclosed report and concluded that the Subject Property: (1) is not contaminated with the types and concentrations of contaminants found at the Superfund Site; and (2) the Subject Property did not contribute to the contamination at the Superfund Site. This is the same conclusion reached by EPA in its 1993 CERCLA Report. (Report, pp. 20-21, Ecology & Environmental 1993.)

Waterstone's report includes important information never before submitted to EPA. It is unclear why this information was never provided. We suspect that earlier consultants may have believed the information was irrelevant or redundant. However, this information is very relevant

and sheds new light on earlier conclusions proposed by EPA's contractor, Ecology & Environmental ("E&E"). This new information includes:

1. Excerpts from the deposition transcript of Steve Mullinnix. Mr. Mullinnix was the City and County of San Francisco employee onsite during the City's Yosemite Fitch Outfall Consolidation Project ("YFOC"). Mr. Mullinnix's deposition testimony describes in detail the waste and other materials he witnessed during the City's YFOC excavation and trenching activities.
2. The Chain of Custody form from the OW-3 sample taken by L&W Environmental in 1989. The Chain of Custody form proves that the L&W sample was a 100% pure product sample—and not a groundwater sample. The single PCB detection from the Subject Property was not 3,700 µg/L in groundwater as reported by E&E, but rather 3.7 mg/kg 100% product sample.
3. Photographic evidence from RWD's files. Photographs of the City's YFOC sewer upgrade project and receipts for clean crushed rock purchased by RWD's predecessor to cover and protect the Subject Property.

After evaluating this new information, along with the information already available, Waterstone makes the following findings:

- The only PCB detection ever obtained from the Subject Property was incorrectly categorized as 3,700 µg/L in a groundwater sample by E&E. The correct result was 3.7 mg/kg in 100% pure product sample. This trace detection is very suspect, not reproducible, and likely represents a false positive. (*Section 5.0*)
- EPA's earlier CERCLA reports correctly conclude that the Subject Property is not responsible for the contamination found at the Superfund Site. (*Sections 4.6-4.8*)
- Any contamination on the Subject Property is the result of years of historical Navy infilling of waste and other materials. (*Sections 3.3, 6.1*)
- Immobile trace levels of TPH contamination at the Subject Property have been delineated and do not reach the Yosemite Slough. (*Section 4.2*)
- The Subject Property owners and tenants did not use significant amounts of chemicals. In fact, there is no evidence or other information to suggest that PCBs, metals or lead were used by the Subject Property's owners or tenants. (*Section 2.0*)
- The Subject Property is covered in crushed rock and asphalt and has not eroded into the Yosemite Slough. (*Sections 2.1, 7.1*)

Rachel Tennis, Esq.
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- The Superfund Site is contaminated by other known industrial uses and years of sewer and runoff discharges into the Yosemite Slough. (*Sections 3.5, 6.0*)
- Statements offered by the PRP Group Attorney concerning the Subject Property are factually incorrect and present Subject Property data out of context. (*Section 7.4*)

Waterstone's report clearly establishes that: (1) the earlier information regarding the single PCB detection on the Subject Property is suspect and unsupported; (2) RWD has not contributed to the contamination at the Superfund Site; (3) the Subject Property has not eroded or contributed to contamination via erosion into the Yosemite Slough; and (4) the information provided by the PRP Group Attorney is incorrect and should not be relied upon.

We hope this report is helpful and will assist EPA in its further evaluation of RWD and the Subject Property. We look forward to discussing this report with you at your earliest convenience.

Very truly yours,



REBECCA COUCH BARNHARDT
Jeffer Mangels Butler & Mitchell LLP

Enclosures

Response to EPA General Notice of Potential Liability, Yosemite Creek Sediment Superfund Site, San Francisco County, California

RWD Associates, LLC

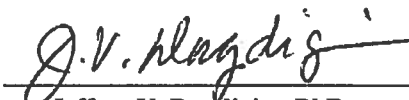
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San Francisco, California 94212**

January 10, 2014

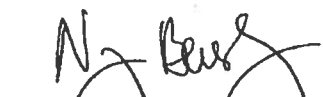
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Section 1.0

Introduction

1.1 Introduction

Waterstone Environmental, Inc. (Waterstone) submits this Report, on behalf RWD Associates, LLC (RWD), in response to the *General Notice of Potential Liability, Yosemite Creek Sediment Superfund Site, San Francisco County, California* dated April 5, 2013, (EPA General Notice Letter), and Nico W. van Aelstyn of Beveridge & Diamond PC (PRP Group Attorney) January 20, 2012 letter addressed to Thanne Cox, Esq. of EPA (PRP Group Attorney Letter).

The RWD property¹ is 3.357 acres in size, and is located at 1205, 1301, 1375, and 1335-1339 Yosemite Avenue and 1296, 1320, and 1340 Armstrong Avenue, San Francisco, California 94212 (Subject Property).² The Subject Property is located in the northwestern portion of San Francisco Bay (Bay), south of downtown San Francisco (Figure 1). Northeast of the Subject Property is the rocky peninsula known as Hunters Point that extends into the Bay (Figures 1 and 2). Figures 3 and 4 show the Subject Property's boundaries.³

The Subject Property is located on the southern bank of the Yosemite Slough (Slough). The Slough is the discharge point of the Yosemite Creek, a small drainage way that drains the Yosemite Basin extending to the northwest (see Figure 5). The Slough has been a historical discharge point for stormwater and sewage for approximately 60 years. The Slough is connected to the South Basin which is part of the Bay. The United States Environmental Protection Agency, Region IX (EPA) is currently investigating the Slough, which is also referred to as the Yosemite Creek Sediment Superfund Site (Superfund Site).

1.2 Purpose of the Report

Waterstone conducted a detailed review of the Subject Property's history and sampling data and compared it to contaminants known to exist in Slough sediments. Waterstone also evaluated a large amount of information from RWD's files, some of which was not evaluated previously but is relevant to the Subject Property. The following information was not provided in response to EPA's 104(e) request, likely because other consultants may have believed the information was irrelevant or redundant. The new information includes:

¹ RWD's property has, in some previous reports and correspondence, been referred to as the "Buckeye Properties."

² Property addresses reported are based on current addresses for the 7 parcels owned by RWD Associates as recorded by the County of San Francisco Assessors Office.

³ There is a portion of the eastern half of the Subject Property which is not owned by RWD (Figures 3 and 4). Julio Ricci leased this tract until 1998. The tract reverted back to the State of California in 1999. The State of California owns this 1.0 acre tract of land which is administered by the Port of San Francisco.

- **Deposition Transcript of Steve Mullinnix, dated September 14, 1993.** (Steve Mullinnix, 1993). Mr. Mullinnix was employed as an Industrial Waste Inspector with the Bureau of Water Pollution Control in 1986. He was the City and County of San Francisco employee onsite during the Yosemite Fitch Outfall Consolidation Project (YFOC) sewer upgrade on streets adjacent to the Subject Property. New information relevant to the Subject Property, from this deposition transcript, is discussed in Sections 3.3 and 4.2.2. Relevant excerpts of the transcript are included in Appendix A-1.⁴
- **L&W Environmental, Chain of Custody (COC) form** from the collection and analysis of a sample of liquid collected from well MW-1 (previously known as OW-3) on the Subject Property, discussed in detail in Section 4.3 and included in Appendix A-2. (L&W Environmental, 1989). The COC was not included in the data package originally provided by the laboratory which is not unusual for the time period. Waterstone located the COC in RWD's files separate from the lab report. Gribi Associates apparently did not find this information in RWD's files or did not recognize it as a part of the OW-3 information when it responded to EPA's 104(e) request on behalf of RWD.
- **Other RWD File Materials**
 - Photographs of the City's 1986 YFOC sewer upgrade (showing debris and liquid in trenches across the Slough), are included in Appendix A-3. These photos were not provided to EPA likely because it was photographic information for an offsite area (adjacent street). Gribi Associates may have considered this information redundant and/or not responsive to EPA's 104(e) request.
 - Receipts from crushed rock purchased in the 1950s are included in Appendix A-4.

Waterstone also reviewed information and sampling data for the surrounding sites that contaminated or could have contaminated the Slough sediments. Together, this Report presents all of the information necessary to provide an accurate accounting of the environmental condition of the Subject Property. The information does not support the core assumptions made by EPA and the PRP Group attorney to identify RWD as a potentially responsible party (PRP). It is clear that corrections should be made to the earlier data presented to EPA by its contractor, Ecology and Environmental, Inc. (E&E). Based on Waterstone's evaluation: 1) the Subject Property is not contaminated with the type and degree of contaminants found in the Slough; and 2) the Subject Property did not contribute to the Slough contamination.

1.3 PRPs for the Yosemite Creek Sediment Superfund Site

Polychlorinated biphenyls (PCBs) and, to a lesser degree, metals, pesticides, and hydrocarbon compounds are the main contaminants of concern requiring mitigation at the Slough. Approximately 80 EPA General Notice Letters were issued to parties indicating their potential responsibility for contaminated sediments at the Superfund Site. The EPA General Notice Letter issued to RWD (included in Appendix B) suggests contaminants migrated from the Subject Property to the Slough through subsurface migration and/or surface runoff. EPA's General Notice Letter does not identify the specific documents or other information it relies on for its

⁴ This deposition was taken as part of a lawsuit between Buckeye Properties and the City.

conclusion. However, environmental data and other information indicate that the Subject Property did not contribute to the contamination found in the Slough.

Multiple Subject Property investigations have concluded there is no current or former site use that is responsible for contamination on the Subject Property or in the Slough. (French 1990, E&E 1990, E&E 1991, E&E 1993, Gribi 2007). EPA's decision to name RWD as a PRP may have been partially or wholly based on erroneous and unsupported opinions presented as factual information in the PRP Group Attorney Letter (included in Appendix C). The PRP Group Attorney Letter presents Subject Property data out of context and draws conclusions that are not based on scientific evaluation or data. The inaccuracies contained in the PRP Group Attorney Letter are discussed in greater detail in Section 7.4.

Section 2.0

Subject Property Formation and Chemical Use History

2.1 Subject Property's Site History & Formation

Waterstone performed an extensive aerial photographic analysis to evaluate the episodes of Bay infilling that resulted in the Subject Property's current configuration. The Subject Property is composed of fill materials emplaced by the Navy, prior to 1954, to create dry land on the Bay margin (Appendix D). The Navy dumped waste materials, including numerous barrels and drums containing a wide variety of petroleum products and petroleum hydrocarbon contamination (free product). Petroleum products were found in pieces of degraded drums, wire rope, water heaters, hospital supplies, parts of rail cars, large pieces of unidentified metal, metal shop waste, and glass (Sections 2.4.4 and 3.3).

2.1.1 1954-1965: RK Lumber Used Crushed Rock on the Subject Property

RK Lumber prepared the Subject Property's ground surface by purchasing and importing clean crushed rock to level and raise it further above the high tide mark. RK Lumber purchased approximately 17,500 cubic yards or slightly over two feet of crushed rock to cover the entire Subject Property. Clean crushed rock was purchased from reputable suppliers and did not contain any foreign objects or contaminants, unlike the fill material used by the Navy. Purchase records for the crushed rock (which have not been presented to EPA or other reviewers) are included in Appendix A-4.

2.1.2 1954-1986: No Significant Chemical Usage by RK Lumber

RK Lumber was the sole occupant of the Subject Property for over 30 years, from approximately 1954 to at least 1986. The current property owners, RWD, are the son and daughter-in-law of the original owners of RK Lumber. RK Lumber specialized in kiln dried ponderosa, sugar pine lumber, clear firs, hemlock, cedar, vertical grain (VG) firs, domestic plywood, and dry redwood.

2.1.2.1 No Significant Chemical Usage by RK Lumber or its Tenants

There is no history or evidence of significant chemical usage at the Subject Property, except for two gasoline underground storage tanks (USTs) used to fuel company vehicles. The first UST was installed around 1956, and the second UST was installed in 1983. Both USTs were removed in 1986, and the requisite soil and groundwater sampling and analysis were performed. Low level detections were the same concentration both upgradient and downgradient of the USTs, indicating that the USTs did not cause significant groundwater contamination. The case was then closed by the City of San Francisco Local Oversight Program (LOP), as discussed in Section 4.1.

No chemicals related to the wholesale lumber business were ever used on the Subject Property, according to the RWD owners' personal knowledge and records. RK Lumber did not treat, paint, chemically-alter, protect, or enhance the lumber brought to its yard. The lumber was stored on the Subject Property for customer purchase. This is the only activity that occurred at the Subject

Section 2.0

Property until the mid-1980s.

2.1.3 1986: Navy Fill Exposed During YFOC Sewer/Storm Drain Trenching

In 1986, ERM-West performed extensive trenching for the City as part of the YFOC sewer upgrade. The YFOC sewer upgrade was conducted along Armstrong Avenue, Hawes Street, and Yosemite Avenue, adjacent to the Subject Property. Significantly, this is the first time that fill materials placed by the Navy prior to 1954 were observed adjacent to the Subject Property.

ERM-West and RWD were onsite to observe the trenching/excavation activities. Items previously discarded by the Navy, and used as fill material (canteens, mess kits, etc.), were exhumed during trenching and observed by RWD. RWD provided Waterstone with extensive photographic documentation of the trenching activities and discarded Navy items (Section 3.3).

2.1.4 1987-Present: No Significant Chemical Use by Tenants

Portions of the Subject Property were leased to various light industrial businesses beginning in 1987. A complete list of all known tenants and their historic uses on the Subject Property is included in Table 3.

Gribi Associates performed a Phase I Assessment of the Subject Property in 2007, and identified the following Subject Property occupants/businesses and associated potential recognized environmental conditions (RECs) (Gribi, 2007):

Inset Table 1: Tenants and RECs on the Subject Property⁵
(Phase I Environmental Assessment, Gribi Assoc., 2007)

Parcel Number	Address	Tenant Name	Years on Site	Recognized Environmental Condition
4845-001	1204 Armstrong Ave.	Ciracosta Iron & Metal	1	No RECs
4845-003	1295 Yosemite Ave.	Higgins Construction	20	Possible RECs: Waste oil storage and handling in small maintenance shop, some staining of soils
	1200 Armstrong Ave.	Alpine Construction	10	No RECs
	1296 Yosemite Ave.	Ace Roofing	1.5	No RECs
	1296 Armstrong Ave.	Ranger Pipeline	18	No RECs
4846-001	1301 Yosemite Ave.	Fog Town Storage	1	No RECs
	1300 Armstrong Ave.	Vacant Yard	1	No RECs
4846-002	1301 Yosemite Ave.	Fog Town Storage	1	No RECs
4846-003	1320 Armstrong Ave.	Shaw Pipeline	8	No RECs
4846-013	1335 Yosemite Ave.	Scene 2	17	No RECs
	1335 Yosemite Ave.	Multeen Transport	6	No RECs
4846-016	1339 Yosemite Ave.	Handy Dan, Inc.	0.17	No RECs
	1320 Armstrong Ave.	Bay Area Metals	5	No RECs

Gribi Associates concluded that the historical onsite activities, in and around the Subject Property, did not significantly impact the Subject Property. This conclusion corroborates RWD's own statements regarding RK Lumber and its tenants' use of the Subject Property.

⁵ Gribi Associates verified the field addresses in 2007 that were associated with each parcel number identified. A complete list of addresses associated with each parcel and tenant is included in Table 3.

2.2 Three EPA CERCLA Reports Indicate No Significant Chemical Usage Onsite

E&E, on behalf of EPA, conducted three CERCLA investigations on the Subject Property between 1990 and 1993, to determine whether the Subject Property was a contributor to the Slough contamination (Sections 4.6, 4.7, and 4.8). The CERCLA investigations concluded that no Subject Property activities used significant amounts of chemical compounds or treated any lumber on the Subject Property. E&E's conclusions, in all three CERCLA Reports, corroborate the information provided by RWD.

2.3 Further Tenant Discussion

City Debris Box/Mobile Debris Box

City Debris Box operated at the Subject Property from 1990 to 1996 and received construction debris for wood reclamation. The wood was sorted from the debris and fed into a wood chipper. The wood chips were shipped offsite for use at cogeneration plants. In 1994, the California Department of Toxic Substances Control (DTSC) performed a Site Screening Assessment and collected two soil samples from 1300 Yosemite Avenue where City Debris Box was operating. One sample contained lead (presumably due to the presence of lead based paint) at 2,400 parts per million (ppm) and the other contained total petroleum hydrocarbons (TPH) at approximately 150,000 ppm. This material was subsequently removed from the Subject Property.

Mobile Debris Box Services operated at the Subject Property from 1996 until 1998 when they reportedly went out of business. This business consisted of bringing boxes loaded with construction debris to the property for storage and processing. The soil was placed on a concrete slab and drainage was to the south onto Armstrong Avenue away from the Slough.

In 1998, the City collected ten serpentine rock samples and fifteen demolition debris samples at Mobile Debris Box from soil and construction debris piles at 1375 Yosemite Avenue, between the railroad tracks and Armstrong Avenue, and analyzed them for lead and asbestos. All ten serpentine rock samples contained between 6% and 9% chrysotile asbestos. Six demolition debris samples contained between 1% and 6% chrysotile asbestos and two samples contained between 30% and 35% chrysotile asbestos. This result was not surprising because serpentine contains naturally-occurring asbestos and is commonly encountered bedrock in the San Francisco area. Two of the lead samples were elevated. However, the analysis was conducted on paint found on construction debris and was reflective of lead based paint.

The San Francisco Department of Public Health, Environmental Health Management Section (SFDPH) issued a Notice and Order for Compliance (Order) on May 23, 1997. The Order required that the Subject Property cease and desist all illegal solid waste activities and to remove all solid waste from the property. The California Integrated Waste Management Board removed the construction debris piles at the request of the SFDPH in September 1998. This issue was resolved and no further work was required.

Gribi Associates evaluated the City's sampling activities in its 2007 Phase I, and did not identify

Section 2.0

this as a REC because all of the debris piles were properly removed. There is no evidence to suggest there was any migration from the waste piles to the subsurface of the Subject Property. There is also no evidence to suggest that the waste piles contained compounds that were transported to the Slough, since: 1) the waste piles in question were located along Armstrong Avenue; 2) they were not in close proximity to the Slough; and 3) surface runoff for this area does not drain to the Slough. This area of the Subject Property was also paved and, therefore, it is highly unlikely that these solid materials (lead and asbestos) had any negative impact on the subsurface of the Subject Property.

Ranger Pipelines

Ranger Pipelines operated at the 1296 Armstrong Avenue Warehouse from August 1988 to December 2012. The warehouse was used for construction activities and equipment storage. Ranger Pipelines responded to EPA's 104(e) request on November 22, 2012. Ranger Pipelines indicated it used limited quantities of materials related to maintaining vehicles and equipment including motor oil, hydraulic oil, brake fluid, and anti-freeze. Any associated wastes were disposed of by Fremont Environmental Services. Ranger Pipeline's 104(e) response did not indicate any releases to the Subject Property.

Gribi Associates did not identify any RECs associated with Ranger Pipelines. Gribi Associates stated they had "Good waste oil/chemical handling practices (secondary containment); no significant staining during site reconnaissance." There is no evidence to suggest that any of the materials used by Ranger Pipelines migrated to the Slough.

Scene 2

Scene 2 operated at 1335 Yosemite Avenue and occupied warehouse space from March 15, 1992 to August 31, 2010. Scene 2 constructed scenes and props for movies and reportedly used latex paints, lacquer thinner, plastics, resins, and very small amounts of solvents and oil based paints.

Gribi Associates did not identify any RECs based on Scene 2's operations. Gribi Associates indicated they had "Good chemical handling practices; no significant staining during site reconnaissance." There is no evidence to suggest that Scene 2's uses resulted in the possible migration of compounds to the Slough.

Fog City Storage

Fog City Storage occupied both 1301 Yosemite Avenue and 1320 Armstrong Avenue from May 2007 to April 30, 2009. They operated a multi-tenant storage yard with various sub-tenants. Gribi Associates did not identify any RECs associated with Fog City Storage's operations.

Gribi Associates indicated they had "No outside hazardous waste/substance storage; buildings are fully-contained steel cargo containers; no significant staining during site reconnaissance." There is no evidence to suggest Fog City Storage's operations resulted in possible migration of compounds to the Slough.

Section 3.0

Site Conceptual Model

3.1 Setting

The Subject Property is located in an industrial area of southeast San Francisco at a reported approximate elevation of two feet below sea level relative to the San Francisco City Datum (sfcd). The Subject Property is bordered on the north (northeast) by the Slough, also known as the South Basin Inlet. The Slough is subject to tidal influence. Bay water moves out of the Slough towards the center of the Bay during low tide. This results in shallow water or exposed land in the Slough. At high tides, water moves towards the shore causing deeper water in the Slough.

3.2 Yosemite Basin Watershed

The Subject Property is located in the Yosemite Basin watershed. (Figure 5). Average annual rainfall is approximately 21 inches per year, and occurs primarily between October and April. Precipitation in the Yosemite Basin causes surface runoff into a network of underground and surface drainage pathways (Figure 7). These pathways converge into drainage culverts, streams, and/or creeks which converge in various places downstream, combining to create larger flow volumes before reaching final discharge points at three sewer/storm drain outfalls that discharge into the Slough.

The discharge points that release runoff into the Slough are known as Outfalls #40, #41, and #42 (Figure 8), and are discussed in more detail in Section 3.4. From the 1930s to the 1980s, discharges to the Slough included industrial wastes and untreated sewage. Discharge events were extremely frequent prior to the mid-1980s, when over 45 discharge events occurred per year. Currently, discharge events have been reduced to approximately one per year.

3.3 Navy Fill Material On and Near the Subject Property

Artificial fill placement started over 100 years ago along the eastern shoreline of the San Francisco peninsula. In 1906, debris from the San Francisco fire was used as fill along shoreline areas (and elsewhere). Years later, the Navy began infilling the former Bay margin areas at and in the vicinity of the Subject Property, Hunters Point, and areas in between. Fill was consistently used by local and federal government entities to eliminate wetland and marshy areas to create additional land suitable for building and commerce.

Waste materials, that would not be suitable as fill today, were used in and around the Subject Property and at Hunters Point. The fill was further compromised because some of the natural rock in the San Francisco peninsula is serpentine which contains naturally-occurring asbestos. Trenching and excavating in San Francisco has historically revealed serpentine rock, discarded items, and debris. Much of this fill contains chemicals that are hazardous to human health and the environment.

EPA's CERCLA Preliminary Assessment Report describes fill material on the Subject Property

(referenced as the “site” or “Buckeye Properties”) as follows:

“The site was a landfill created by filling the tidal flats of San Francisco Bay between approximately 1943 and 1955. When the landfill was closed in approximately 1955, the site was acquired by Ricci and Kruse Lumber Company. During the war and immediate post-war period, much of the historic Bay margin in the South Basin was subjected to considerable fill and dumping operations either by the U.S. Government, its contractors, or private individuals following cessation of the war emergency. The filling of the Bay margin in the South Basin appears to have been indiscriminate both within and outside the boundaries of the Naval Reserve at Hunters Point. Portions of the Hunters Point Naval Shipyard were built on landfill reclaimed from the Bay at the same time as the Buckeye Properties site.”

(E&E, 1990). Steve Mullinnix's deposition transcript provides details of the YFOC sewer upgrade not previously reviewed by EPA or the PRP Group Attorney (Steve Mullinnix, 1993).⁶ Mr. Mullinnix's sworn testimony lists the materials he observed in the fill, adjacent to the Subject Property, in 1986:

- Numerous barrels and drums, some of which appeared intact, containing a wide variety of petroleum products including some free product,
- wire rope,
- water heaters,
- hospital supplies,
- parts of rail cars,
- large pieces of unidentified metal,
- metal shop waste,
- glass

Mr. Mullinnix also testified that newspapers from 1944 and 1945 were among the fill items. RWD provided Waterstone with photographic evidence of additional items found in the fill, in 1986, including:

- canteens,
- mess kits,
- hospital intravenous (IV) bottles,
- Jeep tires,
- bedpans.

RWD's photos from 1986 are included in Appendix A-3. RWD retained some of the items above along with a fragment of newspaper dated November 30, 1944, as shown in Inset Figure 1 below:

⁶ Relevant excerpts of Mr. Mullinnix's deposition transcript are included in Appendix A-1.

**Inset Figure 1: Wastes Recovered from
1986 YFOC Trench by City and County of San Francisco (Steve Mullinnix)**



Several lifeboats and rafts were found in fill materials on the Subject Property, based on an enlarged aerial photograph taken in 1948. A change order letter, for work associated with the YFOC sewer upgrade, requests additional funds for disposal of “a 4-5 foot thick layer of metal scrap and steel cable” encountered in the excavated materials. This letter and 80 photographs of the YFOC sewer upgrade are included in Appendix A-3. Approximately 20 pages of photographs of the YFOC sewer upgrade, and the trenching and installation of a “transport/storage structure” which exposed more fill materials, are included at the end of Appendix A-3 (mapped on Figure 7). All photos and annotations in Appendix A-3 are from RWD's files.

The artificial fill material extends to an approximate depth of 9 feet below grade, and is underlain by younger Bay mud and Bay side sand. Bay mud was present just below the Bay water surface during the Navy infilling. Any pre-1950's contamination present in Bay sediments was trapped in place beneath the fill dumped by the Navy when the Subject Property was formed.

3.4 Yosemite Slough Outfalls

Yosemite Creek is the main waterway that drains the Yosemite Basin. The Yosemite Creek headlands, flow path, and discharge points are shown on Figure 5. The areas surrounding Yosemite Creek, including the Subject Property, were mainly marshlands, wetlands, or submerged below mean sea level prior to the turn of the century.

The Naval Shipyard started ship repair operations in 1941. This area was developed for residences, commercial businesses, and small industry by 1950. The Naval Shipyard area was an active center for secondary manufacturing that supported the shipyard from the 1940s to 1974.

Most industries were within the boundaries of the Yosemite Basin with runoff from the industries eventually discharging into the Slough.

The Yosemite Creek/Slough was hydraulically isolated, until 1958, with combined outflows from the City storm drains and sanitary sewers at the following three locations (Figure 8):

- **Outfall #40** was located on the north side of Yosemite Creek near Griffith Street and drained a sub-basin approximately 200 acres north of Yosemite Creek, including sanitary and stormwater discharges from the following industrial operations (and known sources of contamination in the Superfund Site):
 - Bay Area Drum,
 - Legalett Tannery,
 - Naval Shipyard.
- **Outfall #41** was located at the head of Yosemite Creek and discharged the greatest volume from the basin, including most of the area east of Highway 101.
- **Outfall #42**, was located along the southern shoreline near the mouth of Yosemite Creek and Fitch Street, and drained a sub-basin including industrial properties located along the southern edge of Yosemite Creek, as well as the Candlestick Park area.

In 1959, combined wet-weather flows were still discharged from the three Outfalls. All dry-weather flows were, however, transported and treated at the Southeast Wastewater Pollution Control Plant (SEWPCP), and later discharged at a depth of 12 meters (40 feet) into the Bay from the Southeast Outfall.

The City upgraded its sewage collection and treatment facilities, pursuant to the Clean Water Act, leading to reductions in pollutant loadings by the mid-1980s. A transport/storage box designed to contain wet-weather flows from Yosemite Basin went into operation in 1990. The wet weather overflow, located at the end of Yosemite Street, was replaced with an overflow weir located near the end of Yosemite Creek. The combined sewer collection system reached its current configuration by 1991. Infrastructure improvements reduced total suspended solids into Yosemite Creek, and the annual number of overflows into Yosemite Creek dropped from approximately 45 each year to an average of one per year.

3.5 Contamination in Yosemite Slough

Contamination from sewer and runoff discharges in the Slough likely dates back to the 1930s. Pesticides, metals, and PCBs were used in industrial operations located within the Yosemite Basin watershed drainage area, east of the current location of Highway 101 (see Figure 2). Historical assessments of properties potentially contributing to contaminated Slough sediments have identified two main sources:

- The Bay Area Drum Facility located at 1212 Thomas Avenue; and
- An industrial landfill operation located on the northern shoreline of Yosemite Creek at the Naval Shipyard, near the northwestern tip of the Slough. The landfill operation accepted soils and industrial wastes from the Naval Shipyard, including PCBs, heavy metals, and petroleum hydrocarbons from at least 1958 through 1974.

Slough sediments are fine-grained and contain high organic carbon. Contaminants discharged into the Slough are persistently retained within the sediments themselves because of these characteristics. It takes little energy or water movement to stir up bottom sediments that may be contaminated. Contamination is constantly redistributed by tidal fluctuations and storm events that suspend and re-distribute the sediments. Thus, the location of contaminated samples cannot always be used to accurately identify a source location because of the constant movement of fine grained, contaminated sediments.

3.6 Subject Property Surface Drainage

RK Lumber placed approximately two feet of clean crushed rock as stable cover on the Subject Property prior to development. The majority of the Subject Property is paved with either asphalt or concrete. Therefore, there is minimal opportunity for soil migration from the Subject Property's boundaries.

All overland flow or stormwater flow follows paths from the Subject Property to the City installed storm drains on Figure 10. The roads bordering the Subject Property, including Yosemite Avenue, have a one foot high crown from the gutter to the centerline. Therefore, surface water flows downhill along the curb to the nearest storm drain, not uphill and across the centerline of any of the streets. Surface flows from the Subject Property to the Slough are effectively eliminated. A large curb and gutter, two storm drains, and a retaining wall align the Slough side of Yosemite Avenue, northwest of the intersection with Hawes Street, further preventing any surface runoff from entering the Slough. These City installed appurtenances prevent any Subject Property erosion and there is no transport of soil from the Subject Property via erosion or stormwater runoff to the Slough.

Yosemite Avenue's high crown runs the entire length of the Subject Property northwest of Hawes Street between the Subject Property, the Slough, and an additional parcel of City owned land (APN 4845004) that lies between the Subject Property and the Slough. Therefore, the Subject Property is not directly connected to the Slough. The surface drainage patterns observed do not indicate that surface water from the Subject Property has entered the Slough directly from overland flow. There is no Subject Property erosion that indicates this has occurred over time or is currently occurring.

Section 4.0

Previous Environmental Assessments

This section discusses the relevant environmental reports and findings for the Subject Property, other nearby properties, and the Slough. These reports are discussed in greater detail in Appendix E.

4.1 Subject Property: UST Removal and Closure

4.1.1 Harding Lawson Associates (HLA) report dated June 11, 1986

Two USTs were located on and removed from the Subject Property. The first UST, installed in 1956, was a 1,000 gallon tank used for gasoline storage that had not been used since 1983. The second UST, installed in 1983, was a 2,000 gallon gasoline tank located approximately 134 feet southeast of the Tank 1. The first UST appeared to have some corrosion when it was removed. No corrosion was noted on the second, newer UST. Soil and groundwater samples collected from both excavations showed low level TPH-G. Sheens were also present on the groundwater.

The fill near both tanks contained random construction debris, which may have included hydrocarbon products used by the Navy as fill materials. HLA concluded that low level TPH-G in groundwater may have originated from the fill since Tank 2 had no sign of any leaks, yet the soil concentrations detected beneath both tanks, and in groundwater from each tank pit, were very similar even though they were located 134 feet apart. HLA also stated that no free product was noted.

4.1.2 Gribi Associates: Results of Groundwater Sampling dated December 29, 2006

Gribi Associates conducted a groundwater investigation on September 5, 2006, as a follow up to the 1986 tank removal (Gribi, 2006). The goal of the investigation was to assess soil and groundwater impacts in 8 borings (B-1 through B-8, see Figure 8), both up and downgradient of the former USTs to determine whether TPH-G impacts found during tank removal were attributable to the former USTs. Tables 1a and 1b provide the results of soil analysis, and Tables 2a and 2b provide the results of groundwater analysis, for all borings located on and near the Subject Property (Figure 8).

The results did not indicate a significant hydrocarbon release from the Subject Property's USTs because the hydrocarbon concentrations were similar, if not higher, in upgradient borings relative to downgradient borings. The results were also consistent with hydrocarbon levels identified during previous investigations in and around the Subject Property, and are representative of hydrocarbon concentrations derived from historic Navy filling activities prior to RK Lumber's operations.

Gribi Associates concluded that the low-level hydrocarbon impacts in soil and groundwater, in and around the Subject Property, did not pose a risk for continued commercial/industrial use of the Subject Property. Gribi Associates recommended that the Subject Property be granted regulatory closure.

4.1.3 City of San Francisco: Remedial Action Completion and Certification-Dec. 13, 2006

The City's Department of Public Health issued a Remedial Action Completion Certification confirming completion of the investigation and corrective action for the USTs formerly located at the Subject Property on December 13, 2006. A copy of this letter is included in Appendix F.

4.2 Subject Property and Vicinity: 1986-1987 Trenching for Sewer Upgrade

ERM-West investigated toxic and hazardous wastes as part of the City's YFOC sewer upgrade along the streets adjoining the Subject Property: Armstrong Avenue, Hawes Street, and Yosemite Avenue (ERM-West, 1986). The City's Maher Ordinance required this work because developers of properties within previously landfilled portions of the Bay must complete hazardous waste investigations prior to project construction. Waste material was discovered in the Navy fill including many objects and materials previously described in Section 3.3. The investigation was then expanded to include the removal and treatment of waste material, and monitoring of excavated areas for compounds that could be hazardous to worker health.

A 66-inch diameter sewer was constructed along Armstrong Avenue on the Subject Property's southern boundary as part of the YFOC sewer upgrade. The City also constructed a 17' deep by 40' wide outfall basin along Hawes Street in the center of the Subject Property, across Yosemite Avenue, and across the Yosemite Creek/Slough. The trench and outfall installations within the Slough are shown on numerous photographs contained in Appendix A-3.

4.2.1 Sampling Results

ERM-West collected soil and groundwater samples from soil borings along Armstrong Avenue and Hawes Street in November 1986. Three observation/extractions wells (OW-1, OW-2, and OW-3) were installed and sampled during the study. The wells are shown on Figure 8 (ERM-West, 1986, 1987). Tables 1a and 1b provide the results of soil analysis, and Tables 2a and 2b provide the results for groundwater analysis, for all borings located on and near the Subject Property (Figure 8).

Soil samples from borings "I", 7, 7A, and 8 indicated elevated concentrations of metals (copper, zinc, nickel, lead) in the soil. A black-colored product, described as "aromatic" due to its odor, was found floating on the groundwater in boring 7, near the intersection of Armstrong and Hawes. The product smelled like tar, and ERM-West assumed it was creosote or some derivative of wood treatment because of its proximity to the lumber yard (when, in fact, this material has no connection to the lumber yard but is Navy fill-related). Soil samples containing this material, from borings 7 and 8 (depths were not reported), were analyzed for creosote and pentachlorophenol and these chemicals were not detected above a detection limit of 10 mg/kg.

Free product was found during sampling near the intersection of Armstrong and Hawes that was identified (apparently by smell) as creosote and diesel fuel. Figures 8 and 8a show the extent of what ERM-West identified as a "contaminant plume." Soil borings "U", "V", "W", and "X" were drilled along Armstrong Avenue and soil borings "C", "R", "S", "Q", "T", "Y", and "Z" were drilled along Hawes Street. The contaminant plume was not found in northerly borings "C", "R", and "S", indicating that petroleum hydrocarbons were not within approximately 100

feet of Slough waters.

Elevated levels of TPH, benzene, toluene, and xylene (BTEX) were detected in the groundwater. The water samples from boring 7A were analyzed and found to contain elevated levels of polycyclic aromatic hydrocarbons (PAHs). The extent of PAHs contamination in groundwater appeared was limited to a 250' by 250' area around boring 7A (see Figure 8).

Soil samples collected from borings 7 and 8 were composited for each boring, and analyzed for PCBs. PCBs were not detected in any of the soil or groundwater samples collected during ERM-West's investigation. This is significant because borings 7 and 8 are within 60-75 feet of OW-3 (see Section 4.3), which reportedly had product floating on the groundwater that was subsequently analyzed and resulted in a low level PCB concentration of 3.7 mg/kg.

4.2.2 Removal of Free Product by the City

A mitigation plan was prepared before proceeding with the City's YFOC sewer upgrade. Mitigation included the extraction of free product via removal of water and product from beneath the streets and adjacent properties by pumping and separating the materials in tanks. Some of the contaminated soil was also segregated and disposed of offsite, with the less impacted soil used for backfill in the sewer trenches for the YFOC sewer upgrade.

OW-1, OW-2, and OW-3 were used to extract free product and water during the YFOC sewer line installation (Figure 8). A "treatment facility" was constructed in the area to extract free product via dewatering through pumping groundwater/product from OW-1, OW-2, and OW-3. The treatment facility was located along Armstrong Avenue near the intersection of Hawes Street. OW-3 was inadvertently placed on the Subject Property by ERM-West due to some reported confusion over the fencing and property lines.

Mr. Mullinnix, the City employee onsite during the YFOC sewer upgrade, described his observations in detail (Steve Mullinnix, 1993).⁷ Mr. Mullinnix described the treatment facility as an area used to separate and store segregated free product, water, and waste soil. This temporary treatment facility consisted of two Baker tanks, a plastic-lined area to receive soil, and a drum storage area.

Separation was accomplished by pumping to either of the two Baker tanks, which were open top tanks used to allow the product to separate from the pumped fluid. Mr. Mullinnix testified that the Baker tanks were 4,200 gallons each, and a French drain/trench was installed along Armstrong between the wells to enhance recovery from the wells. The French drain was a trench backfilled with gravel to a depth of approximately 15 feet.

Over 6,000 cubic yards of impacted soil was reportedly removed. Mr. Mullinnix did not indicate how much fluid or product was recovered. However, it was a considerable effort and it appears that only residual levels of immobile contamination remained in the subsurface after the YFOC sewer upgrade was completed. Thus, the lateral extent of petroleum hydrocarbon impacts should not have changed significantly after this assessment.

⁷ Relevant excerpts of Mr. Mullinnix's testimony are included in Appendix A-1.

4.3 Subject Property: June 1989-Product Sample from OW-3

RWD retained L&W Environmental (L&W), in June 1989, to collect a sample of liquid from well OW-3 on the Subject Property (see Figure 8).⁸ L&W did not prepare a report to describe this sampling work and the laboratory data provides the only documentation of this sampling event. Gribi Associates provided the laboratory data for this sample in response to EPA's 104(e) request. However, COCs were not typically included in laboratory analysis data sheet packages at the time.⁹ Waterstone procured a copy of the COC from RWD's files where it was filed in a miscellaneous file separate from the laboratory data. The COC was apparently never requested or reviewed by EPA, E&E, or the PRP Group Attorney.

Waterstone's review of the COC for this sample provides important new information that casts serious doubt on the accuracy and veracity of subsequent environmental reports prepared for EPA. This is discussed further in Section 5.

4.3.1 RWD Notified EPA Following the Discovery of Free Product

RWD notified EPA following the discovery of free product. This prompted the first of the three EPA site investigations and evaluations.

4.4 Subject Property: March 20, 1990 Phase I Environmental Assessment

Christopher M. French, R.G., conducted a Phase I Report on the Subject Property to determine the nature and source of contaminants found during the YFOC sewer upgrade (Christopher M. French, R.G., 1990). The scope of work included the compilation and evaluation of findings pertaining to the physical setting, contaminant source verification, hazardous waste characterization, and risk assessment for the properties in the area of the YFOC sewer upgrade.

According to the Phase I Report, excavation activities associated with YFOC sewer upgrade exposed considerable debris, scrap iron, military hardware, naval rigging, hospital waste, buried drums, waste oil, and liquid chemical waste. A qualitative association can be surmised between waste discovered in the YFOC sewer project area and areas currently subject to environmental cleanup at Hunters Point Naval Shipyard Superfund Site.

ERM-West's subsurface investigation of soil and groundwater indicated that a large area of floating product was located under a portion of the Subject Property; potentially elevated concentrations of metals, chlorinated aliphatic hydrocarbons (1,1 and 1,2-dichloroethylene), PAHs, waste oil, and benzene may be present beneath the Subject Property. PCBs were not detected in any of the soil or groundwater samples collected adjacent to or from the Subject Property. Photographic evidence suggested that the construction activities associated with the City's YFOC sewer upgrade may have contributed to the release and/or migration of contaminants into the subsurface adjacent to the Subject Property. Additionally, the porous backfill of the sewer and outfall basin may provide a conduit for subsurface transport along its

⁸ L&W, who was not involved in the YFOC sewer upgrade, did not know that the well had been referenced previously as "OW-3" and simply labeled the sample as "MW-1 Monitor Well."

⁹ The COC form travels with the samples to the lab and provides details about the type of sample collected, the date sampled, and identifies the parties that had custody of the sample until it was received at the laboratory.

extent. A preliminary risk assessment was performed and indicated that a low probability of risk to the environment or human health may exist, provided that a substantial route of exposure was not present. The risk assessment was reportedly subject to considerable uncertainty due to the paucity of available and reproducible data.

4.5 Adjacent Property – 1313 Armstrong Avenue Soil Sampling Activities

Baseline Environmental Consulting prepared a "Report on Site Characterization" dated December 1987, for a neighboring adjacent property occupied by E.S Brush and Sons Lumber located at 1313 Armstrong Avenue (Baseline Environmental Consulting, 1987). A.D. Schraeder reportedly owned this property and used it for rail-related activities until 1960 when it became a lumber yard. The Characterization was conducted to identify the past land uses and whether these uses could have impacted the subsurface, and account for the free product encountered and removed by the City during the YFOC sewer upgrade.

Soil sampling activities conducted on this property indicate that the petroleum hydrocarbon concentrations and free product detected beneath Armstrong Avenue near the intersection of Hawes Street are delineated to the south and do not appear to extend any appreciable distance south of Armstrong Avenue toward the Slough (Figure 8).

4.6 Subject Property: December 7, 1990 EPA CERCLA Preliminary Assessment

E&E conducted a CERCLA Preliminary Assessment on the Subject Property, on behalf of the EPA, on December 7, 1990 (E&E, 1990). The CERCLA Preliminary Assessment made certain conclusions based on the following historical detections at the Subject Property including:

Table 1
Highest Levels of Contaminants Detected in Groundwater
at the Buckeye Properties Site

<u>Contaminant</u>	<u>Concentration (ug/L)</u>	<u>Maximum Contaminant Level (MCL)(ug/L)</u>
benzene	800	1*
toluene	140	100**
ethylbenzene	1000	680*
xylene	1200	1750*
1,1-dichloroethylene	<0.5 – 200	6*
Polychlorinated biphenyls (PCBs)	3700	0.5***

*MCLs taken from California Code of Regulations Title 22 (April 1989)

**State Action Level recommended by the California Department of Health Services (April 1989)

***MCL taken from U.S. Environmental Protection Agency (June 1989)

The 3,700 µg/L reported above for PCBs, which is compared to a water MCL of 0.5 µg/L, represents erroneous information. The result was actually 3.7 mg/kg of PCBs in a free product sample based on Waterstone's review of the COC from the 1989 OW-3 sample. Therefore, this lab data is erroneous and should not have been compared to a regulatory standard for groundwater. This is further discussed in Section 5.

This CERCLA report concludes:

In 1986, sampling performed by consultants in conjunction with the construction of a sewer project at the site revealed contamination in groundwater and soil. Laboratory analysis revealed the presence of polycyclic aromatic hydrocarbons, halogenated hydrocarbons, aromatic hydrocarbons, heavy metals, and polychlorinated biphenyls.

The following are significant Hazard Ranking System Factors associated with Buckeye Properties:

- o There is observed soil and groundwater contamination on site,
- o Cadmium has a high toxicity and high persistence in the environment,
- o There is a large commercial fishery located in San Francisco Bay,
- o There are several sensitive environments, including federally protected species, located in San Francisco Bay, and
- o There is an on-site trailer residence, as well as a large residential population within 1 mile of the site.

E&E recommended that a "Higher Priority SSI (Statistically Significant Increase) Report under CERCLA" be performed.

4.7 Subject Property: July 15, 1991 EPA CERCLA Preliminary Re-assessment

E&E prepared another CERCLA report, on behalf of EPA, to re-assess the work completed in 1990 and conduct additional follow up inspections and interviews (E&E, 1991).

Hazard Ranking System (HRS) considerations were as follows:

- The potential for documenting an observed release of contaminants from the Subject Property to surface water is high.
- The contaminants of concern in the Slough have high toxicities.
- Actual contamination of a fishery in the South Basin Canal, which is adjacent to the Subject Property, may have occurred; and
- Contaminated groundwater below the Subject Property may be under tidal influence with the Bay.

E&E reported the following conclusions:

- The Subject Property occupants did not contribute to any of the soil or groundwater impacts identified at the Subject Property.
- The Navy landfill area, identified beneath Armstrong Avenue and Hawes Street, is a potential source of uncontained hazardous substances. The Subject Property was re-ranked a Lower-Priority for Further Subject Property Assessment.

4.8 Subject Property: June 14, 1993 EPA CERCLA Site Inspection Report

E&E conducted a third CERCLA Subject Property Inspection, on behalf of EPA, on June 14, 1993 (E&E, 1993). The Inspection did not include sampling, but rather summarized and evaluated previous investigative results and potential human health and environmental risks. This report showed variable concentrations of hydrocarbons and metals, in soils and groundwater, along both sides of the Slough. The report states "Metals and hydrocarbons contamination at the Subject Property is primarily limited to the subsurface. The Subject Property is fenced and partially paved. There are several businesses on the Subject Property but no residences. The surrounding area is primarily light industrial, and the nearest residences are about 1,000 feet north of the Subject Property."

Photos of contaminated fill taken during the YFOC sewer upgrade show: 1) visual contamination was not present in the upper two feet of soil beneath the Subject Property; and 2) that downward migration of contamination is impeded by Bay muds, which are present at about 15 feet in depth. The lateral extent of contamination was not determined and the report notes that "contamination of fill is widespread in San Francisco." The following hydrocarbon constituents and concentrations were detected in the contaminated fill: 5,400 mg/kg of Acenaphthylene; 4,100 mg/kg of Flouranthene; 48,000 mg/kg of Naphthalene; 11,000 mg/kg of Phenanthrene; and 470,000 mg/kg of TPH. PCB concentrations were not detected. Boring BH6 was drilled immediately east in an expected downgradient groundwater flow direction from the Subject Property's former 1,000 gallon gasoline UST. TPH/BTEX constituents were not detected and only background concentrations of metals were collected from this soil sample.

The Subject Property occupants did not contribute to any of the soil or groundwater impacts identified at the Subject Property according to interviews and information obtained. E&E's report concluded that the Subject Property: "does not qualify for future remedial Subject Property assessment under CERCLA." This decision was based on: (1) widespread hydrocarbon and metals contamination in Bay fill materials and sediments; 2) contaminants beneath the Subject Property are not associated with known onsite activities; (3) groundwater use is limited in the Subject Property vicinity, and the Subject Property is fenced and paved; and (4) the contamination in the Yosemite Creek/Slough sediments cannot be attributed to the Subject Property because there are numerous potential offsite sources. (Emphasis added.)

The report's conclusions are consistent with Waterstone's findings, as documented throughout this Report. Waterstone has not identified any records or documents to refute EPA's conclusions above.

4.9 Subject Property: June 21, 2007 Phase I Environmental Site Assessment

Gribi Associates conducted a Phase I Environmental Site Assessment (ESA) for the Subject Property in June 2007 (Section 2.1.4). The Phase I ESA was conducted to identify potential sources of contamination or RECs that could adversely impact the Subject Property's environmental conditions (Gribi, 2007).

Gribi Associates concluded that no current or post-1954 businesses or activities on the Subject Property, or in the Subject Property vicinity, significantly impacted environmental conditions on

the Subject Property; any historic soil and groundwater hydrocarbon impacts near the intersection of Hawes Street and Armstrong Avenue were the result of Navy infilling. Gribi Associates recommended that regulatory closure remain in place provided the land use does not change from commercial/industrial to residential.

4.10 Yosemite Slough Sediments: 1995-2012 Evaluation of Contamination

Environmental assessments have been conducted on the Slough since 1995, mostly within the upper 5 feet of sediment and the surrounding tidal area. Earlier assessments were conducted by grid sampling the Slough sediments at various locations and depths. The environmental assessments reviewed by Waterstone are included in the References section and more fully discussed in Appendix E.

Assessments performed within the Slough indicate that sediments are impacted with PCBs, metals, total petroleum hydrocarbons as diesel and motor oil, and pesticides. The primary chemicals of concern that require remedial action at the Superfund Site are lead and PCBs (E&E, April 2013).

Section 5.0

Re-Evaluation of PCB Detection on the Subject Property

Only one sample was ever collected on or near the Subject Property that contained PCBs. The sample was collected by L&W, in 1989, from a City installed well on the Subject Property known as OW-3 (see Section 4.3). L&W referred to this well as MW-1, not realizing that it was already labeled well OW-3. This single sample represents the sole link between PCBs in Slough sediments and possible contributions from the Subject Property.

Waterstone evaluated the available information for this single PCB detection. EPA's interpretation of the laboratory data for this PCB detection in the 1990 CERCLA report raises certain technical questions. Waterstone's evaluation presents new information because other reviewers have not presented these technical questions to EPA.

5.1 EPA's Reports Incorrectly Identify OW-3 Sample Media

Standard field protocols require that the type of sample (soil, water, sediment, or product) be recorded on the COC. COCs were not typically included in laboratory data sheet packages until the mid-1990s. Thus, it is not surprising that the COC was not included in E&E's report to EPA. Waterstone obtained a copy of the COC from RWD's files because the type of sample collected is critical to interpreting the laboratory results. This is the first time the COC has been reviewed in conjunction with all available data for the Subject Property. A copy of the COC is included as Appendix A-2.

The OW-3 sample was identified as 3.7 mg/kg PCBs in groundwater in the 1990 CERCLA Report. This is unusual because mg/kg is not the correct unit of measurement for a groundwater sample. Waterstone confirmed that mg/kg are units of measurement that are typically used for soil, sediment, or free product. Groundwater samples are represented as a unit of liquid (liters or milliliters). The OW-3 sample represented either sediment contained in a water sample or a product sample based on the reported unit of mass measure (kg). Both possibilities would make sense because free product was found in drums, and remnants of drums, in close proximity to well OW-3 (ERM-West, 1986, 1987). Steve Mullinnix's deposition testimony confirmed that drums and pieces of drums containing liquids were observed in the fill materials exposed by the City's excavations during the YFOC sewer upgrade (Steve Mullinnix, 1993).

The COC identified the sample as "100% product sample." The reported units were correctly identified by the laboratory as mg/kg, and E&E's reporting of the sample as a groundwater sample with a PCB detection of 3,700 ug/l was incorrect. The correct reporting of this sample is 3.7 mg/kg in a 100% product sample.

The 3.7 mg/kg detection of PCBs is indicative of a trace concentration of PCBs in free product because typical concentrations of PCBs in PCB oil are orders of magnitude higher. For comparison purposes, concentrations of PCBs below 50 mg/kg are not even considered PCB oils and are not regulated as such under the Toxic Substances Control Act (TSCA).

5.2 There is No Documentation that the OW-3 Sample Was Filtered

EPA reviewers, assuming that a water sample yielded the PCB results, do not mention or appear to consider that the purported PCB detection could have resulted from an un-filtered sample. The COC, and the laboratory analysis data sheets, do not indicate that the sample was filtered in the field or laboratory before analysis. Filtering is performed prior to groundwater analysis to ensure that contaminated soil particles are not analyzed as groundwater. The filtered groundwater (or liquid) is then analyzed so that anything dissolved in the liquid itself may be measured.

PCB and metal detections may have resulted from the inadvertent analysis of contaminated sediments in an unfiltered liquid sample. This is significant because the Subject Property was created when the Navy placed fill and waste material directly onto Bay sediments that were already contaminated from discharges into the Bay from sources other than the Subject Property. These contaminated Bay sediments were then trapped beneath the Navy's fill on the Subject Property.

Under normal conditions, contaminated Bay sediments would be immobilized by the fill cover. However, when a well is drilled into these sediments and sampled, the sediments are commonly suspended in the sample. These sediments were suspended in the OW-3 product sample since well OW-3 penetrated the contaminated Bay mud sediments. In an unfiltered sample, it is not known whether the detected compounds were actually in the product itself or contained within contaminated sediments suspended in the product. EPA did not perform this critical analysis of the single PCB detection on the Subject Property.

5.3 There Was No Evaluation of a Possible False Positive for OW-3

A single detection of the main chemical of concern should immediately motivate a scientific reviewer to evaluate whether the sample result represents a false positive. There is no indication that this evaluation was performed. The PCB detection in free product from OW-3 is highly questionable, and should not be relied on based on the following four "false positive" evaluations.

- A false positive result for PCBs can occur due to interferences associated with analyzing a PAH-based free product sample like the sample collected from OW-3. PAH results for OW-3 are shown on Table 1a. Free product samples of this nature will typically result in a raised detection limit due to interferences caused by the elevated concentrations of the PAHs present. A detection limit of 0.5 mg/kg was reported for OW-3 which does not appear to have been raised to account for these interferences. This low detection limit should have been further evaluated because it would not be the expected detection limit for the analysis of a product sample containing elevated concentrations of PAH. If detection limits were raised as expected, the PCB result of 3.7 mg/kg would have been below the detection limit and, therefore, questionable.
- False positives for PCBs may also occur due to interferences from chlorinated compounds present in the sample material, including chlorinated pesticides. Chlorinated pesticides are documented in the Slough and are prevalent in the area.

- Phthalate esters found in PVC equipment or containers used for sample collection can also interfere. Certain lab and field sampling procedures are used to eliminate the interferences that may result in false positives. However, there is no indication these procedures were followed in the collection or analysis of this single sample.
- EPA failed to consider another potential for a false positive. A soil sample from boring 7 with black-colored product, described as “aromatic” due to its odor, was analyzed for PCBs and PCBs were not detected (see Section 4.2.2). Boring 7 is located 75 feet from OW-3 where the 3.7 mg/kg PCBs sample was detected. This soil sample most likely contains material identical to the product found in OW-3. The fact that PCBs were not detected in boring 7 is evidence that the result in OW-3 was not reproducible. Reproducibility is a basic component of data validation procedures and the lack of PCBs in this nearby sample indicates there is a high likelihood that the 3.7 mg/kg PCB concentration is inaccurate and, therefore, should not be relied upon to draw any conclusions about the Subject Property.

5.4 Extent of Free Product with PCBs is Defined and Does Not Reach the Slough

ERM-West evaluated PCB and petroleum hydrocarbon impacts in soil surrounding OW-3. A soil sample collected from OW-3 indicated a TPH concentration of 470,000 mg/kg, which is consistent with the detection of free product at this location. TPH detections can be used to further define the extent of PCBs on the Subject Property because the reported PCBs were only detected in the free product sample, indicating PCBs and TPH are co-located.

If E&E assumed the PCB detection of 3.7 mg/kg in free product from OW-3 was a valid result (which earlier discussions indicate is questionable) the area of PCBs is defined based on the detections in soil samples collected from locations 6, 7, and 8 surrounding OW-3 (Figure 8). These soil samples were analyzed for PCBs and did not contain PCB concentrations above the detection limit of 0.1 mg/kg. Borings 6, 7, and 8 and OW-3 are circled in green on Figure 8, designating the locations where PCBs were analyzed. The results confirm that PCBs were found in only one sample, the free product sample, and that the surrounding soil is not impacted by PCBs. Accordingly, the reported PCBs did not extend into the Slough.

ERM-West recovered free product in 1987, leaving immobile residual levels of free product in the soils above the water table (Section 4.2.3). ERM-West removed most of this product when the soils beneath Armstrong Avenue and Hawes Street were excavated for the YFOC sewer upgrade. Approximately 6,000 cubic yards of petroleum impacted soil were removed and disposed of during the excavation. ERM-West attempted to define the area impacted by TPH and contaminants during the YFOC sewer upgrade. Borings “C”, “R”, and “S” were clean borings which indicate that at least 100 feet separates the immobile residual TPH from the Slough.

No soil or groundwater samples collected or analyzed from the Subject Property or surrounding streets, contained reliable detections of PCBs. The small amount of PCBs reported, in the free product sample from OW-3, is not representative of the Subject Property because the detection is

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not supported or corroborated by other data and is a very low concentration for a product sample. The PCB detection was either the result of a false positive, the result of suspended Bay sediment in the sample, or that the areal extent of the detectable PCBs in the product (which was placed in the fill by the Navy) is so limited that the results are not reproducible. Even if the PCB detection was valid, TPH concentrations have been defined by numerous borings and indicate no entry of TPH into the Slough from this source. This data, coupled with ERM-West's soil sampling results from soil borings 6, 7, and 8 which indicated no detectable concentrations of PCBs, confirm that PCBs have never entered the Slough from the Subject Property.

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Sources of Yosemite Slough Contamination

Contaminated Slough sediments likely originated throughout the broader Yosemite Creek Basin watershed. EPA's list of potential sources includes hundreds (and perhaps thousands) of industrial site uses for locations throughout the large area drained by Yosemite Creek and discharged into the Slough.

EPA's sources of Slough sediment contamination can be separated into the following categories:

Yosemite Slough Contamination Source List

1. The Navy- From activities on the Naval Shipyard
 - a. Direct discharges from industrial uses and shipbuilding activities caused contaminated Bay sediments to migrate, through water movement, into the Slough
2. The Navy- From improperly disposed of contaminated fill materials
 - a. From contaminated fill materials eroding into the Slough from the Naval Shipyard
 - b. From chemicals leaching out of fill materials
 - c. From groundwater circulating through contaminated fill material causing contaminated groundwater to migrate to the Slough
3. City and County of San Francisco
 - a. Through decades of discharges from outfalls to the Slough, from City and County owned and operated sewers, which acted as conduits for movement of contaminated groundwater into the Slough
 - b. Regular flooding of both Armstrong and Griffith pump stations at high tide flowing back into the Bay;
4. Industrial users of property in the Yosemite Basin
 - a. Industrial users discharged chemicals to the sewer/drainage ways and into the Slough, including the following sites that stored or used large quantities of chemicals:
 - i. Bay Area Drum formerly located at 1212 Thomas
 - ii. Legalette Tannery and others
 - b. Historical stormwater flows from industrial users bringing contaminated stormwater runoff into the Slough
 - c. Direct discharges of chemicals or contaminated water to the Slough

6.1 The Navy as a Source for Yosemite Slough Contamination

The Naval Shipyard is a separate Superfund site with numerous operable units that border the Slough. Located north of the Subject Property, and across the Slough, the Naval Shipyard operated as a shipbuilding and ship repair facility with continued heavy industrial use for over 120 years. Industrial uses at the shipyard generated large amounts of wastes including solvents used to clean parts, acids and caustics used in fabrication of parts, sand blast wastes including lead from lead based paints, waste oil, waste acids, cyanide wastes, chromates, heavy metals,

PCBs, unclassified chemical wastes, radioactive waste, and asbestos.

Between 1958 and 1974, the Navy used an industrial landfill (IR-1) to dispose of industrial wastes at the Naval Shipyard. A map of the Naval Shipyard Operable Units is included in Appendix G for reference. Wastes identified in IR-1 include construction and demolition wastes, domestic wastes and refuse, dredge soil materials, sand blast waste, shop industrial and chemical waste, solid and liquid ship repair waste, and low level radioactive waste (from shipboard radium dials and electronics equipment).

Six contaminated sites are located near the Navy railroad right of way and access road and include: 1) the former industrial landfill located in a filled portion of the South Basin (IR-1), 2) the Bay Fill Area, also located on land reclaimed from the Bay (IR-2), 3) the Oil Reclamation Ponds (IR-3), 4) the Scrap Yard (IR-4), 5) the Old Transformer Storage Yard (IR-5), and 6) the Pickling and Plate Yard (IR-9) (Appendix G). These sites are directly adjacent or in close proximity to the Slough and have significant levels of PCB and metals contamination, the main contaminants of concern in the Slough.

Between 1954 and 1974, more than 7,000 pounds of copper and lead and 250 gallons of PCBs were released in the Scrap Yard parcel (IR-4) that adjoins the South Basin. From 1944 to 1984, approximately two million gallons of waste oil were processed each year at a reclamation facility that used unlined storage ponds. The reclamation facility is located on the southwest side of the shipyard, approximately 10 meters from the shoreline of the South Basin of the Bay. Waste oils sent to the reclamation facility very likely contained PCBs.

Regular discharges to the City's sewers and storm drains, from industrial facilities in the southwest portion of the Naval Shipyard, entered Yosemite Creek at Outfall #40. PCBs were likely discharged to the Slough based on the volume of PCBs used and landfilled by the Navy, and the nature of the industrial operations associated with the Naval Shipyard. This documented source far exceeds any other contribution to the contamination of Slough sediments.

Deeper waters directly east of the Slough, and adjacent to the Subject Property, are referred to as the South Basin and are part of Parcel F. The Navy is currently evaluating the PCB contamination in this area and has proposed removing the top two feet of impacted sediment. There is concern, however, that sediment transport from the Slough could re-contaminate this area after the top two feet are removed. This concern was part of the impetus for sediment investigations conducted at the Slough.

6.2 City and County of San Francisco Sewer Outfalls to Yosemite Slough

In 1998, Arthur D. Little, Inc. prepared *Sediment Investigation at Yosemite Creek* for the City's Public Utilities Commission and submitted it to the San Francisco Bay Regional Water Quality Control Board (Arthur D. Little, Inc., 1998). Sediment samples were collected to measure the vertical and horizontal distribution of sediment contaminants along the length of Yosemite Creek, and from the nearby southwest shoreline of the Hunters Point Naval Shipyard. Total PCB concentrations ranged from 244 to 804 ppb in surface sediments from Yosemite Creek, averaging 435 ppb, with the highest concentration measured in the western creek channel. Significantly higher levels were recorded in the South Basin, where the surface average was approximately double the average surface concentration from the creek (873 ppb). The

distribution of total PCBs was not significantly correlated with total organic carbon (TOC), because the sediments from the South Basin contained relatively low TOC levels but also contained elevated PCBs concentrations.

On May 5, 2004, Batelle prepared the *Draft Report – Sediment Investigation at Yosemite Creek* for the City's Public Utilities Commission Planning Bureau (Battelle, 2004). The report presents the results, interpretations, and conclusions of a comprehensive sediment investigation conducted in the Bay at Yosemite Creek. Two field surveys were conducted during wet weather in October 1998 and April 2000. A single dry weather survey was conducted in October 1999. Chemicals of concern identified in Slough sediments included lead, zinc, mercury, dieldrin, total chlordane, total DDT, and total PCBs. The report concluded that Yosemite Creek is a complicated environment which reflects injury from historic receipt of standard industrial contaminants, presumably from combined sewer overflows, storm-water runoff, aerial fallout, sediment erosion, and re-suspension and transport of contaminated sediments. It further concluded that upgrades to the CSO system, elimination of the use of several environmental contaminants (e.g. PCBs and chlorinated pesticides), near site source removal, and improvements in general air quality likely have contributed to the overall reduction of contaminant concentrations in upper surface sediments as compared to buried sediments. This conclusion was based on the trend of reduced contaminant concentrations observed in Yosemite Creek surface sediments collected from three surveys over an 18 month period.

6.3 Bay Area Drum Discharges to Yosemite Slough

The Bay Area Drum property is located at 1212 Thomas Avenue (see Figure 7), 4-5 blocks north of the Subject Property. Bay Area Drum operated for more than 40 years, from the 1940s to 1987. During this period, it cleaned and refurbished drums onsite. Bay Area Drum typically received drums from petroleum companies, paint companies, solvent manufacturers, thinner manufacturers, and solvent recyclers. Drums were sorted by type and quantity and stacked in the yard. At any given time, the number of drums ranged from a few hundred to several thousand. Rinse water and solids from the drums were regularly discharged to the sewer/storm drain and entered Yosemite Creek at Outfall #40.

Pre-treatment consisted of a trench with a large screen that allowed most of the solids to enter the sewer system. By 1974, a system was built to contain, reuse, and recycle the caustic solution used to wash the drums. Following a City request, in 1975, a system was implemented to catch and reuse washing water, remove solids from the catch basin, and adjust pH prior to discharge into the sewer. In 1986, the City issued a Cease and Desist Order requiring full compliance with applicable regulations and discharge requirements.

Soil and groundwater assessments conducted at the Bay Area Drum property confirmed the presence of elevated metals, PCBs, pesticides, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) in soil and/or groundwater beneath the property and in the vicinity. Maximum total PCB concentrations detected in onsite soils were 2,600 mg/kg and lead maximum concentrations were as high as 52,200 mg/kg (CEPA DTSC, 2000, 2003). The property was subsequently remediated and received a No Further Action letter from DTSC in July 2003.

The former Bay Area Drum property was a significant contributor to the PCBs and metals

contamination within the Slough due to: 1) the confirmed detections of very significant concentrations of metals and PCBs; and 2) 40+ years of direct discharges to the Slough through wastewater discharged to the City sewer/storm drain at Outfall #40.

6.4. Other Sources of Contamination to Yosemite Slough

Hundreds of sites have discharged directly to the Slough and/or contaminated Slough sediments through historical and/or current runoff, stormwater, and/or sewage discharge. Heavy industry surrounding the Naval Shipyard is well documented and its contribution to Slough sediments should be evaluated. The significant studies performed on the Subject Property confirm that Subject Property operations have not impacted the Slough. Suffice it to say, the Subject Property's contribution to the Slough appears to be zero and hundreds of other industries should be evaluated based on their contributions to the Slough.

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Conclusions

Based on Waterstone's evaluation of all available data and information, the following conclusions can be made:

7.1 RK Lumber responsibly placed clean cover over the Subject Property and performed environmental assessments to evaluate its own operations.

RK Lumber expended the necessary time and money to locate reputable crushed rock dealers to fill and protect the surface of the Subject Property. The details of this work are provided in Section 2.2.1. ERM-West's reports confirm that the top two feet of fill at the Subject Property are clean. In addition, the majority of the Subject Property is paved with asphalt preventing infiltration into fill materials below.

RK Lumber immediately cleaned up areas of the Subject Property impacted by chemical compounds after it removed two USTs in 1986. A small area of TPH-G and BTEX concentrations were detected at the Subject Property, and RK Lumber performed the requisite removals and sampling. The concentrations detected in the subsurface soil and groundwater were compared against data both upgradient and downgradient and were similar, regardless of position or distance from the USTs. HLA concluded that the detected concentrations likely resulted from the documented waste material used by the Navy. In 2006, Gribi Associates concluded that the presence of low-level hydrocarbon impacts in soil and groundwater, in and around the Subject Property, and did not pose a significant risk for continued commercial/industrial use of the Subject Property.

The City concurred and, on December 13, 2006, issued a Remedial Action Completion Certification for the Subject Property. E&E, on behalf of the EPA, also stated in their Site Assessment Report for the Subject Property that "[t]hese tanks are not hazardous substance sources because gasoline is excluded from consideration as a hazardous substance under CERCLA." (E&E, 1993, page 5-6).

RWD also notified the EPA after free product was discovered adjacent to the Subject Property. This is a very environmentally responsible action by RWD. This prompted the first of the three EPA site investigations and evaluations. All three reports declined to identify the Subject Property as a responsible party for the contamination in the Slough.

7.2 Chemicals detected in the subsurface at the Subject Property do not match the type and degree of contaminants known to exist in Yosemite Slough sediments.

Any soil and groundwater contamination on the Subject Property appears limited to the central portion of the Subject Property near the intersection of Hawes Street and Armstrong Avenue. (Figure 8). This contamination is clearly from the waste materials that were emplaced by the Navy. Visual evidence of drums and containers containing oily wastes were observed during the City's extensive excavation on and near the Subject Property. Chemical analysis of the materials

found during the City's YFOC sewer upgrade indicated the following chemical compounds:

- PAHs including
 - acenaphthylene,
 - flouranthene,
 - naphthalene, and
 - phenanthrene,
- TPH,
- BTEX, and
- MTBE.

A few metals concentrations detected in soil beneath Hawes Street were also slightly elevated, including:

- lead,¹⁰
- nickel, and
- zinc.

Metals concentrations detected are indicative of Bay fill throughout the area because of the extensive nature of infilling the Bay margins. Elevated concentrations were also detected off-site at numerous locations where samples were collected for the YFOC sewer upgrade. The metals concentrations are not unique to the Subject Property, and are not related to any onsite activities performed by RWD, its predecessors, or its tenants. Numerous reports, including three CERCLA reports, agree that past and current uses of the Subject Property have not contributed to the Slough contamination.

EPA's Notice Letter does not specifically identify the evidence used to name RWD as a PRP. The EPA Notice Letter states in part:

"Based on inspection, permit and assessment records obtained from various local government agencies, RWD Associates, LLC was identified as having contributed to the contamination at the Yosemite Creek Site. The records obtained indicate that RWD Associates, LLC's facilities at 1205, 1301, 1375, and 1335-1339 Yosemite Avenue and 1296, 1320 and 1340 Armstrong Avenue, San Francisco, CA 94124 were or are contaminated with contaminants also found in the Yosemite Slough sediments. EPA believes those contaminants have migrated from your properties to the slough through subsurface migration and/or surface runoff."

Waterstone did not locate any information that would justify naming RWD and the Subject Property as contributors to the Slough contamination. Waterstone thoroughly and exhaustively reviewed all available records, including records from various local government agencies. There is no credible, reliable, or new evidence to demonstrate, or even suggest, RWD is responsible for contamination either at the surface or subsurface of the Subject Property, or the Slough sediments.

¹⁰ The highest lead concentration detected adjacent to the Subject Property was in soil sample 7A collected in Hawes Street, which is a considerable distance from Yosemite Slough, and contained 230 mg/kg of lead. This lead concentration was not unique to the Subject Property and was not related to onsite activities.

7.3 There is no reliable evidence of PCB contamination on the Subject Property.

PCBs were never adequately detected in any soil or groundwater sample collected from the Subject Property. The single concentration of PCBs on the Subject Property, was erroneously reported to EPA as 3,700 µg/L in groundwater. This is not correct for the following reasons:

- The sample analyzed was a sample of pure product, not groundwater as the EPA report states. The COC form confirms this and is provided in Appendix A-2.
- Samples from boring 7 contained the same black, smelly material as the product that was analyzed for PCBs. However, samples from boring 7 did not contain any detectable concentrations of PCBs.
- EPA did not properly evaluate the sample results for accuracy and consider the following:
 - The sample was not filtered which could result in soil particles from the deep Bay mud being evaluated in the sample.
 - No evaluation was performed as to whether the single sample represented a false positive. A false positive evaluation is warranted because this is the only PCB detection ever collected from the Subject Property.

PCB concentrations for PCB transformers are typically between 600,000 to 700,000 mg/kg (USEPA; http://www.epa.gov/reg3wcmd/ts_pcb.htm). The maximum concentration of PCBs detected in Slough sediment was 130 mg/kg. A concentration of 3.7 mg/kg is many orders of magnitude lower than typical PCB concentrations in PCB-containing oils and three orders of magnitude lower than the highest concentrations detected in the Slough. In fact, an oil with this PCB concentration would be considered a non-PCB oil under the federal TSCA.

The small reported concentration of PCBs from OW-3 is not reproducible data, its detection is not supported or corroborated by other data, and it represents a trace concentration for a product sample. This information confirms the PCB detection was either the result of a false positive, the result of suspended Bay sediment in the sample, or that the areal extent of the detectable PCBs in the product from the Navy's fill is so limited that the results are not reproducible. Even if the product did contain PCBs, additional sampling data from the Subject Property and surrounding streets confirm that the low concentration of PCBs are limited to the area directly surrounding OW-3, and that these low levels of PCBs have not migrated laterally from this location or into the Slough.

7.4 The PRP Group Attorney Letter contains incorrect information and misquotes factual information regarding alleged PCB contamination on the Subject Property.

Below are erroneous and unsupported or misleading statements (*in italics*) contained in the PRP Group Attorney Letter. Waterstone's replies, based on its extensive evaluation, are underlined below the italic font:

PRP Group Attorney Letter Statement: ...*the Response to EPA's 104(e) Request related to*

the Buckeye Properties Site by RWD indicates that contamination in the slough sediments, including PCBs, likely originated from the Buckeye Properties Site.

Waterstone Reply: There is no information, or soil/groundwater data from the Subject Property that indicates that RWD, its predecessors, or its tenants used the chemicals of concern or that any chemicals used could have contributed to contamination to the surface or subsurface that, through migration, caused contamination in Slough sediments.

PRP Group Attorney Letter Statement: *The Buckeye Properties Site was created by filling tidal flats between approximately 1943 and 1955, and has a long history of mixed industrial uses.*

Waterstone Reply: This statement is misleading as it implies that the Subject Property's "mixed industrial uses" could be a potential source of contamination to the Slough sediments. There are two Phase I assessments, as well as three CERCLA reports, that evaluate in detail the light industry that has historically been performed on the Subject Property. Conclusions by all reviewers do not identify any likely sources of Slough contamination on the Subject Property, and this statement is not supported by any data or information.

PRP Group Attorney Letter Statement: *...during installation of a sewer line under Armstrong Ave. by the San Francisco DPW in 1986, various types of contamination were found in the groundwater and soil beneath the Buckeye Properties Site. Notably, PCB contamination as Aroclor 1260 was found.*

Waterstone Reply: This statement is not correct especially in light of information discussed in Sections 5 and 7.3. PCBs have not been detected on the Subject Property or, if they have, they are not a current or former source of contamination to the Slough.

PRP Group Attorney Letter Statement: *...the location of the PCBs as Aroclor 1260 found on the Buckeye Properties Site appear to be consistent with nearby hits of Aroclor 1260 close to the head of the slough at sampling locations YC-003 and YC-008. These hits are shown as an apparent hot spot at the 1-2 foot sampling depth on the Aroclor 1260...*

Waterstone Reply: This statement over-simplifies this highly complex environment and disregards the constant redistribution of contaminated sediments caused by water flowing from numerous outfalls, the tides, and wind. The location of contaminated Slough sediments today presents the wrong methodology for matching the source area to the contamination. (Section 3.5). The proximity of contaminants in the Slough to the Subject Property does not provide adequate evidence that the Subject Property is the source of Slough sediment contamination because the Slough sediments are routinely transported and redistributed through tidal action, wind, and Bay currents.

Figure 9 shows the sediment sample location YC-003 (13,000 ppm PCB) and YC-008 (23,000 ppm PCB) noted in the PRP Group Attorney Letter. Appendix H is a table showing the results of PCB sampling in all the 35 locations shown on Figure 9. Purple shade has been used on the table in Appendix H to show samples that are closest to the Subject Property. Sample locations YC-001, -009, -011 are all just as close to the Subject Property as YC-003 is, yet their PCB concentrations in the 1-2 foot range are not detected. YC-008 is on the northern bank of

Yosemite Creek and numerous, cleaner samples exist between this sample and the Subject Property. Therefore, this comparison does not make technical sense, especially in light of the single detection of 3.7 µg/L PCB (in product located in fill) on the Subject Property.

PRP Group Attorney Letter Statement: *...(CERCLA) investigations of the Buckeye Properties Site concluded that contaminants likely migrated to Yosemite Slough. That conclusion some twenty years ago appears to have been confirmed by the recent sediment sampling data, which shows a hot spot of PCBs as Aroclor 1260 near where the sewer line was installed at the Buckeye Properties Site and the slough.*

Waterstone Reply: This statement significantly misquotes the conclusions of the CERCLA investigations and uses the location of Slough contamination to incorrectly identify the Subject Property as a source. EPA concluded that the Subject Property "does not qualify for future remedial Subject Property assessment under CERCLA." EPA also concluded:

- Hydrocarbons and metals contamination is widespread in Bay fill materials and sediments, and contaminants beneath the Subject Property have not been associated with known onsite activities;
- Groundwater use is limited in the Subject Property vicinity, and the Subject Property is fenced and paved; and
- Although sediments in Yosemite Creek/Slough are contaminated, this contamination cannot be attributed to the Subject Property, since there are numerous potential offsite sources.

The PRP Group Attorney Letter presents an unscientific misunderstanding of this complex environment, lacks scientific analysis, and misquotes factual information. Adequate information that predates the PRP Group Attorney Letter demonstrates and provides the necessary rationale for removing RWD from the PRP list for the Superfund Site.

Section 8.0

Closing

Waterstone concurs with EPA's 1993 Report and concludes that the Subject Property did not contribute to the Slough's contaminated sediments. This conclusion is based on the information contained in this Report, including the new information regarding the only PCB detection ever collected from the Subject Property.

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References

- Arthur D. Little, Inc., 1999. *Sediment Investigation at Yosemite Creek, Fall 1998*, May 1999.
- Baseline Environmental Consulting, 1987. *Report on Site Characterization, E.S. Brush and Sons Lumber, 1313 Armstrong Avenue, San Francisco*, December 1987.
- Battelle, 2004. *Draft Report, Sediment Investigation at Yosemite Creek*, May 5, 2004.
- Beveridge & Diamond, 2012. *Yosemite Slough Superfund Site, San Francisco, California. Letter to Thanne Cox, Esq., Office of Regional Counsel, U.S. Environmental Protection Agency, Region IX, 75 Hawthorne Street, San Francisco, CA 94105*, January 20, 2012.
- California Environmental Protection Agency, Department of Toxic Substances Control, 2000. *Fact Sheet #7, Bay Area Drum Site, 1212 Thomas Avenue, San Francisco, California*, January 2000.
- California Environmental Protection Agency, Department of Toxic Substances Control, 2003. *News Release, DTSC Certifies Bay Area Drum Site in San Francisco*, July 2, 2003.
- City and County of San Francisco, Department of Public Health, 2006. *Remedial Action Completion Certificate, Underground Storage Tank (UST) Case, Former Ricci & Kruse Lumber Company, 1295 Yosemite Avenue, San Francisco, LOP Case Number: 11741*, December 13, 2006.
- Christopher M. French, R.G., 1990. *Phase I Report for Property Located in San Francisco, CA*. March 20, 1990.
- Department of the Navy, Base Realignment and Closure. *FY 10 Chief of Navy Operations Environmental Awards Environmental Restoration-Installation, Hunters Point Naval Shipyard, Narrative*.
- Dow, 1973. *Bay Fill in San Francisco, A History of Change, (Master's Thesis, SF Public Library)*, July 1973.
- Ecology and Environment, Inc. 1990. *CERCLA Preliminary Assessment, Buckeye Properties, 1296 Armstrong Avenue, San Francisco, CA 94124, San Francisco County*, December 7, 1990.
- Ecology and Environment, Inc. 1991. *CERCLA Preliminary Assessment, Reassessment Summary, Buckeye Properties, 1296 Armstrong Avenue, San Francisco, CA 94124, San Francisco County*, July 15, 1991.
- Ecology and Environment, Inc. 1993. *CERCLA Site Inspection, Buckeye Properties, 1296 Armstrong Avenue, San Francisco, CA*. February 3, 1993.
- Ecology and Environment, Inc. 2011. *Yosemite Creek Sediment Removal Assessment Report*

Final. May, 2011.

Ecology and Environment, Inc. 2012. *Yosemite Slough Sediment Waste Characterization Study Report*, October, 2012.

Ecology and Environment, Inc. 2012. *Estimation of Aroclor 1254 and Aroclor 1260 Concentrations using PCB Congener Data in Yosemite Slough Sediment Sample Data from Yosemite Creek Sediment Removal Assessment Report, May 2011, Ecology and Environment Inc., Prepared for the United States Environmental Protection Agency, CA.* June 14, 2012.

Ecology and Environment, Inc. 2013. *Working Draft, Engineering Evaluation/Cost Analysis, Yosemite Slough, San Francisco, California*, April, 2013.

ERM-West, Environmental Resources Management, 1986. *Hazardous Waste Investigation, Yosemite and Fitch Outfalls Consolidation*, November 3, 1986.

ERM-West, Environmental Resources Management, 1986. *Budget Estimate for Hazardous Waste Investigation, Yosemite and Fitch Outfalls Consolidation*, November 4, 1986.

ERM-West, Environmental Resources Management, 1987. *City of San Francisco, Soil Investigation Report*, January 16, 1987.

ERM-West, Environmental Resources Management, 1987. *City of San Francisco, Department of Public Works, Draft Site Mitigation Plan, Yosemite Outfall Product*, March 27, 1987.

ERM-West, Environmental Resources Management, 1987. *Revised Recommended Health and Safety Plan for the Sewer Line Construction Project, City of San Francisco*, July, 1987.

Gribi Associates, 2006. *Workplan to Conduct Soil and Groundwater Investigation, Former Ricci & Kruse Lumber Co. 1295 Yosemite Street, San Francisco, California SF LOP Site Code 1171*, July 11, 2006.

Gribi Associates, 2006. *Results of Groundwater Investigation Former, Ricci & Kruse Lumber Co. 1295 Yosemite Street, San Francisco, California SF LOP Site Code 1171*, September 29, 2006.

Gribi Associates, 2007. *Phase I Environmental Site Assessment, Ricci Property, 1204, 1296, and 1320 Armstrong Avenue; 1200, 1295, 1301, 1334, and 1339 Yosemite Avenue, San Francisco, California*, June 21, 2007.

Harding Lawson Associates, 1986. *Observation and Testing Underground Tank Removal, Yosemite Avenue and Ingalls Street San Francisco, California*, June 11, 1986.

Holquin, Fahan & Associates, Inc., 1990. *Candlestick Point State Recreation Area, Soil and Water Quality Investigation Report*, March 13, 1990.

LSA Associates, Inc., 2004. *Final Report, Yosemite Slough Watershed Wildlife Survey 2003-*

2004, July 27, 2004.

L&W Environmental, 1989. *Precision Analytical Laboratory, Inc. Laboratory Report and Chain-of-Custody for Free Product Sample MW-1 Collected from Well OW-3*, June 19, 1989.

Mason Tillman Associates, 1986. *Site History Report, Ricci and Kruse Lumber Company, San Francisco, California*, June 1986.

RWD Associates, LLC, 1986. Photographs with annotation (see Appendix A-3) taken in 1986 during the City's sewer update project.

Steve Mullinnix, 1993. *Deposition of Steve Mullinnix, In the Superior Court of the State of California in and for the County of San Francisco, Reginald Ricci, Anita Ricci, Buckeye Properties, a Partnership(Plaintiffs) vs. Homer J. Olsen, Inc., A Corporation, City and County of San Francisco, Does 1-50, Inclusive, (Defendants), Case No. 904073*, September 14, 1993.

United States Environmental Protection Agency Region IX, 2011. *EE/CA Approval Memorandum for Proposed Non-Time Critical Removal Action at Yosemite Creek Sediment Site*, October 21, 2011.

United States Environmental Protection Agency Region IX, 2013. *General Notice of Potential Liability, Yosemite Creek Superfund Site, San Francisco County, California*, April 9, 2013.

United States Environmental Protection Agency Region IX, 2013. *Letter to Mr. Kenneth A. Ehrlich, Jeffer Mangels Butler & Mitchell, Re: Freedom of Information Act Request EPA-R9-2013-006573*, July 2, 2013.

United States EPA Website, Polychlorinated Biphenyls,
http://www.epa.gov/reg3wcmd/ts_pcbs.htm.

Table 1a
Soil Analytical Results
Semi-Volatile and Volatile Organic Compounds
RWD Properties and Surrounding Area
San Francisco, California

Sample ID	Date	Location	Semi-Volatile Organic Compounds by EPA Method 610								Volatile Organic Compounds by EPA Method 8010 and 8020							
			Acenaphthylene	Anthracene	Chrysene	Fluoranthene	Fluorene	Naphthalene	Phenanthrene	Pyrene	PCE	1,2-DCE	Benzene	Toluene	Chlorobenzene	1,3-Dichlorobenzene	Ethylbenzene	Xylene
			milligrams per kilogram (mg/kg) or parts per million (ppm)								milligrams per kilogram (mg/kg) or parts per million (ppm)							
OW-1	1987	On-Site or	48	40	15	58	18	210	150	100	—	—	—	—	—	—	—	—
OW-2	1987	Adjacent to Site	<10	25	<10	33	17	180	88	81	—	—	—	—	—	—	—	—
OW-3	1987	Waste material	5,400	<2,000	<2,000	4,100	<2,000	48,000	11,000	<2,000	—	—	—	—	—	—	—	—
6	1986	On-Site or Adjacent to Site in Street - Subsurface Soil	—	—	—	—	—	—	—	—	<0.05	<0.05	<0.05	1.3	<0.05	<0.05	<0.05	<0.05
7	1986		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7A	1986		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8	1986		—	—	—	—	—	—	—	—	—	—	0.33-0.66	<0.5-870	<0.05	<0.05	<0.5-140	<0.5-97
BH6	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
MW4	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	0.005	<0.005
B"1"	1986	Off-Site Subsurface Soil	—	—	—	—	—	—	—	—	<0.05	<0.05	1700	870	<0.05	<0.05	140	97
9	1986		—	—	—	—	—	—	—	—	0.38	<0.05	0.11	0.89	<0.05	<0.05	<0.05	<0.05
11	1986		—	—	—	—	—	—	—	—	<0.05	<0.05	<0.05	0.3	3.3	1.5	1.0	<0.05
12	1986		—	—	—	—	—	—	—	—	<0.05	<0.05	<0.05	<0.05	0.31	<0.05	<0.05	<0.05
BH3	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
BH4	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
BH5	1989	Surface Water Sediment Yosemite Creek/Slough	—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
CS1	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
CS2	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
CS3	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
CS4	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
CS5	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
CS6	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
CS7	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
CS8	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005
CS9	1989		—	—	—	—	—	—	—	—	<0.005	—	<0.005	—	—	—	<0.005	<0.005

Yellow fill and bold font denotes detectable concentrations.

— Not analyzed or not reported

<0.05 = Not detected above laboratory method detection limit noted.

Data in this table is compiled from the following sources (see References section):
ERM-West 1986, 1987; Holguin, Fahan & Associates, Inc, 1990

Table 1b
Soil Analytical Results
TPH, Creosote, PCP, Cyanide, PCBs, and Metals
RWD Properties and Surrounding Area
San Francisco, California

Sample ID	Date	Location	TPH	Creosote	PCP	Cyanide	PCBs	Metals											
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	Beryllium	Silver	Antimony	Arsenic	Thallium	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury
								mg/kg											
OW-1	1987	On-Site or Adjacent to Site in Street - Waste material	460 ¹	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-2	1987		1400 ¹	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
OW-3	1987		470,000 ¹	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	1986	On-Site or Adjacent to Site in Street - Subsurface Soil	--	--	--	<0.2	<0.1	0.4	0.4	<0.2	13	0.06	0.4	44	19	11	49	44	0.012
7	1986		--	<10	<10	<0.2	<0.1	0.4	0.6	<0.2	9.7	0.05	0.7	50	94	76	46	180	0.020
7A	1986		680 ¹	--	--	--	--	<0.2	0.8	1.4	24	<0.2	12	43	440	230	140	7,400	0.023
8	1986		<0.5-7	<10	<10	<0.2	<0.1	0.3	0.4	<0.2	5	0.03	0.2	35	64	13	28	35	0.039
B"C"	1986		Not within "contaminant plume." No sample analysis - drilled for observation. See Figure 8a.																
B"I"	1986		36 ¹	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B"Q"	1986		Northernmost point within "contaminant plume." No sample analysis - drilled for observation. See Figure 8a.																
B"R"	1986		Not within "contaminant plume." No sample analysis - drilled for observation. See Figure 8a.																
B"S"	1986		Not within "contaminant plume." No sample analysis - drilled for observation. See Figure 8a.																
B"T"	1986		Within "contaminant plume." No sample analysis - drilled for observation. See Figure 8a.																
B"U"	1986		Within "contaminant plume." No sample analysis - drilled for observation. See Figure 8a.																
B"V"	1986		Within "contaminant plume." No sample analysis - drilled for observation. See Figure 8a.																
B"W"	1986		Not within "contaminant plume." No sample analysis - drilled for observation. See Figure 8a.																
B"X"	1986		Westernmost point within "contaminant plume." No sample analysis - drilled for observation. See Figure 8a.																
B"Y"	1986		Within "contaminant plume." No sample analysis - drilled for observation. See Figure 8a.																
B"Z"	1986		Southernmost point within "contaminant plume." No sample analysis - drilled for observation. See Figure 8a.																
BH6	1989		<5	--	--	--	--	--	--	--	--	--	--	37	20	160	58	--	--
MW4	1989		57 ²	--	--	--	--	--	--	--	--	--	--	210	45	10	380	--	--
9	1986	Off-Site Subsurface Soil	--	--	--	<0.2	<0.1	0.2	0.5	<0.2	8.7	0.03	<0.2	94	18	11	50	37	0.054
11	1986		--	--	--	<0.2	<0.1	0.4	0.3	<0.2	4	0.03	0.2	320	29	30	490	72	0.071
12	1986		--	--	--	<0.2	<0.1	0.2	1.7	<0.2	6	0.05	1.8	46	62	740	41	390	0.670
BH3	1989		260 ²	--	--	--	--	--	--	--	--	--	--	86	330	230	480	--	--
BH4	1989		2500 ²	--	--	--	--	--	--	--	--	--	--	33	22	120	140	--	--
BH5	1989		72 ²	--	--	--	--	--	--	--	--	--	--	24	10	130	16	--	--
1	1987	Off-Site 1313 Armstrong	<10 ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2	1987		180 ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	1987		<10 ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	1987		160 ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1b
Soil Analytical Results
TPH, Creosote, PCP, Cyanide, PCBs, and Metals
RWD Properties and Surrounding Area
San Francisco, California

Sample ID	Date	Location	TPH	Cresote	PCP	Cyanide	PCBs	Metals											
								Beryllium	Silver	Antimony	Arsenic	Thallium	Cadmium	Chromium	Copper	Lead	Nickel	Zinc	Mercury
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg											
5	1987	Avenue (south of Subject Property)	83 ³	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
6	1987		<10 ³	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
7	1987		<10 ³	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
8	1987		<10 ³	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
9	1987		<10 ³	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
10	1987		<10 ³	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CS1	1989	Surface Water Sediment Yosemite Creek/Slough	98 ²	---	---	---	---	---	---	---	---	---	41	22	1,300	180	---	---	
CS2	1989		1200 ²	---	---	---	---	---	---	---	---	---	250	76	420	37	---	---	
CS3	1989		68 ²	---	---	---	---	---	---	---	---	---	27	17	29	21	---	---	
CS4	1989		990 ²	---	---	---	---	---	---	---	---	---	42	34	140	28	---	---	
CS5	1989		660 ²	---	---	---	---	---	---	---	---	---	48	110	470	56	---	---	
CS6	1989		360 ²	---	---	---	---	---	---	---	---	---	680	140	420	550	---	---	
CS7	1989		280 ²	---	---	---	---	---	---	---	---	---	65	170	170	62	---	---	
CS8	1989		960 ²	---	---	---	---	---	---	---	---	---	14	95	200	35	---	---	
CS9	1989		1300 ²	---	---	---	---	---	---	---	---	---	90	74	210	41	---	---	
TTLc								75	500	500	500	700	100	2,500	2,500	1,000	2,000	5,000	20

Yellow fill and bold font denotes detectable concentrations.

Orange fill and bold font denotes detectable concentrations exceeding TTLc Values

¹ EPA Method 8015 Modified

² EPA Method 418.1

³ Analytical Method Not Specified, Baseline Environmental Consulting, 1987.

Data in this table is compiled from the following sources (see References section):

Baseline Environmental Consulting, 1987; ERM-West 1986, 1987; Holguin, Fahan & Associates, Inc, 1990

Samples 1, 3, and 5 also analyzed for total PNA's, sample 1 contained 2.2 mg/kg, sample 3 was ND<0.1, sample 5 was ND<1.0.

Cresote by EPA Method 8270

Pentachloro-phenol by EPA Method 8040

TPH = Total Petroleum Hydrocarbons

PCBs = Polychlorinated Biphenyls (lab data sheet indicates "as Arochlor 1260")

PCP = Pentachloro-phenol

mg/kg = milligrams per kilogram or parts per million (ppm)

<0.2 = Not detected above laboratory method detection limit noted.

TTLc = Total Threshold Limit Concentration

-- Not analyzed or not reported

Table 2a
Groundwater Analytical Results
Semi-Volatile and Volatile Organic Compounds
Site and Surrounding Areas
RWD Properties

Sample ID	Date	Location	Semi-Volatile Organic Compounds by EPA Method 625										Volatile Organic Compounds ^{1, 2, 3}						
			Ace-naphthylene	Anthra-cene	Chrysene	Fluor-anthene	Fluorene	Naptha-lene	Phen-anthrene	Pyrene	Benzo(a)pyrene	Bis(2-ethyl-hexylphthalate)	1,1-DCE	1,2-DCE	Benzene	Toluene	Ethyl-benzene	Xylene	MTBE
			milligrams per liter (mg/L) or parts per million (ppm)										micrograms per liter (µg/L) or parts per billion (ppb)						
B-1 ²	9/5/2006	On-site 1295 Yosemite Avenue	--	--	--	--	--	--	--	--	--	--	--	--	15	<1.0	<1.0	<1.0	24
B-2 ²	9/5/2006		--	--	--	--	--	--	--	--	--	--	--	--	5.5	<1.0	<1.0	<1.0	8.1
B-3 ²	9/5/2006		--	--	--	--	--	--	--	--	--	--	--	--	19	1.6	<1.0	<1.0	7.1
B-4 ²	9/5/2006		--	--	--	--	--	--	--	--	--	--	--	--	8.5	2.4	<1.0	2.4	5.5
B-5 ²	9/5/2006		--	--	--	--	--	--	--	--	--	--	--	--	18	<1.0	6.1	7.7	<4.0
B-6 ²	9/5/2006		--	--	--	--	--	--	--	--	--	--	--	--	3.0	1.4	<1.0	5.6	<4.0
B-7 ²	9/5/2006		--	--	--	--	--	--	--	--	--	--	--	--	7.4	<1.0	<1.0	<1.0	<4.0
B-8 ²	9/5/2006		--	--	--	--	--	--	--	--	--	--	--	--	<1.0	<1.0	<1.0	<1.0	<4.0
MW4 ³	1989	Adjacent to Site	--	--	--	--	--	--	--	--	--	--	<0.005	--	<0.005	<0.005	<0.005	<0.005	--
MW5 ³	1989	Off-Site	--	--	--	--	--	--	--	--	--	--	<0.005	--	<0.005	<0.005	<0.005	<0.005	--
MW6 ³	1989		--	--	--	--	--	--	--	--	--	--	<0.005	--	<0.005	<0.005	<0.005	<0.005	--
B7A ¹	1986	Adjacent to Site	0.19	1.6	0.36	1.3	0.38	2.7	0.82	1.0	0.066	0.096	170-200	<0.5	800	140	1000	1200	--
B"O" ¹	1986	Off-Site	--	--	--	--	--	--	--	--	--	--	170-200	<0.5	1200	2300	0.730	1000	--
B"1" ¹	1986	Adjacent to Site	--	--	--	--	--	--	--	--	--	--	180	<0.5	1700	870	140	97	--

Yellow fill and bold font denotes detectable concentrations.

-- Not analyzed or not reported

¹ EPA Method 601 and 602

² EPA Method 8021B

Table 2b
Groundwater and Product Analytical Results
TPH-g, PCBs, Halogenateds, Metals and TDS
RWD Properties and Surrounding Area
San Francisco, California

Sample ID	Date	Location (Figure 8)	Sample Media	TPH-g	PCBs by EPA Method 608	Halogenateds by Method 8010	Metals by Method 6010 (other metals not analyzed or not reported except as noted)					TDS
							Chromium	Copper	Lead	Nickel	Mercury	
				ug/L	mg/L	mg/kg	ug/L (except as noted)					ug/L
B-1	9/5/2006	On-site 1295 Yosemite Avenue	Groundwater	280¹	—	—	—	—	—	—	—	—
B-2	9/5/2006		Groundwater	130¹	—	—	—	—	—	—	—	580
B-3	9/5/2006		Groundwater	140¹	—	—	—	—	—	—	—	—
B-4	9/5/2006		Groundwater	190¹	—	—	—	—	—	—	—	—
B-5	9/5/2006		Groundwater	1900¹	—	—	—	—	—	—	—	—
B-6	9/5/2006		Groundwater	990¹	—	—	—	—	—	—	—	—
B-7	9/5/2006		Groundwater	130¹	—	—	—	—	—	—	—	1,800
B-8	9/5/2006		Groundwater	<50 ¹	—	—	—	—	—	—	—	—
MW4 (Western BH7 Location)	1989	Adjacent to Site	Groundwater	<1 ²	ND	—	0.09	0.09	0.20	0.19	<0.001	—
MW5	1989	Off-Site	Groundwater	1²	ND	—	0.019	<0.05	<0.005	0.08	<0.001	—
MW6	1989	Off-Site	Groundwater	<1 ²	ND	—	0.06	0.17	0.020	0.29	<0.001	—
OW-3 (MW-1) ³	5/25/1989	On-site (corner east of Hawes and north of Armstrong)	Free Product	—	3.7 mg/kg⁴	<1.0	6.9 mg/kg	12.1 mg/kg	16.9 mg/kg	34.9 mg/kg	<5.0 mg/kg	—

Yellow fill and bold font denotes detected concentrations.

— Not analyzed or not reported

TPH-g = Total Petroleum Hydrocarbons as gasoline

PCBs = Polychlorinated Biphenyls

TDS = Total Dissolved Solids

ug/L = micrograms per liter or parts per billion (ppb)

mg/kg = milligrams per kilogram or parts per million (ppm)

mg/L = milligrams per liter or parts per million (ppm)

¹ EPA Method 8015 Modified

² EPA Method 418.1

³ This well was originally called OW-3 by the City during installation. A later consultant referred to it as MW-1 when collecting the product sample. Other detected metals (mg/kg): antimony - 2.0; zinc 14.2; lead-16.9; cobalt-0.7; vanadium-42.9; barium 8.2.

Table 3
COMPILED TENANT INFORMATION
RWD ASSOCIATES
San Francisco, CA

APN	Address listed with APN at Assessors Website	Business Name	Address used by Tenant	On EPA List from 12-5-13?	Dates Tenant was on Site	Business performed onsite	Storage of:	Notes
4845001	1205 Yosemite Ave.	Buckeye Properties (RWD)	1204 Armstrong Avenue	Yes	1954-1986	Lumber Yard and Sales	Lumber	
		BWD Properties			1986-1987	Developer. Lease Option to Purchase		
		Taro Communications			2000-2001	Storage	Equipment, trucks, trailers	
		Core Communications			2005-2006	Storage	Electrical Supplies	
		Ciracosta Iron & Metal			2006-2009	Storage	Empty Roll off debris boxes	Field address confirmed by Gribi 2007
4845003	1296 Armstrong Ave.	Buckeye Properties (RWD)	1295 Yosemite Avenue 1200 Yosemite Avenue 1296 Armstrong Avenue	Yes	1954-1986	Lumber Yard and Sales	Lumber	Two former UST removed and closure obtained
		BWD Properties	1296 Armstrong Avenue	No	1986-1987	Developer. Lease Option to Purchase		
		City and County of San Francisco		No	8/1987-10/1988	Temporary Construction Easement	Construction material	Used during YFOC Sewer Project
		Michael Biagini		No	May-88	Debris box storage	Debris boxes	Yard Space
		Alfetta Motors		No	Jun-88	Classic car storage	Classic cars	
		Gordon Smith		No	Jun-88	Classic car storage	Classic cars	
		Buck Baker Trucking		No	Oct-88	Trucking	Trucks	Yard Space
		Golden Bo Co. & Choyson & Shing Kee		No	1988-1998	Trucking & Wholesale Distribution	Trucks	Warehouse
		Ranger Pipelines		Yes	1988-2012	Contractor	Heavy Equipment	Warehouse
		Norman Berg		No	Aug-89	Trucking	Trucks	Yard Space
		Shins Roofing Supply		No	1989-1991	Roofing and Sheet Metal Storage	Roofing and Sheet Metal	Warehouse
		S&C Roofing Supply		No	1989-1994	Roofing Supplies	Roofing Supplies	Warehouse
		Darcy & Harty Construction Co.		No	1989-1999	Storage of Construction Vehicles	Construction Vehicles	Yard Space
		Higgins Construction		No	1989-2009	Trucking	Trucks	Field address confirmed by Gribi 2007 Yard Space
		Alpine Construction		No	1998-2010	Construction Contractor	Construction Equipment	Field address confirmed by Gribi 2007 Yard Space
		Costello Tree Service		No	2000-2002	Storage of Tree Service Equipment	Tree Service Equipment	Warehouse

**Table 3
COMPILED TENANT INFORMATION
RWD ASSOCIATES
San Francisco, CA**

APN	Address listed with APN at Assessors Website	Business Name	Address used by Tenant	On EPA List from 12-5-13?	Dates Tenant was on Site	Business performed onsite	Storage of:	Notes
4845003 (cont.)	1296 Armstrong Ave.	SF Trucking Repair	1296 Armstrong Avenue Warehouse	No	2003-2005	Truck Repair	Trucks	Warehouse
		Tesseract Design Group			3/2005-9/2005	Custom Tile and Glass Products	Tile and Glass Products	Warehouse
		Ace Roofing Supply			2005-2011	Sales of roofing supplies - Retail Store & warehouse	Roofing supplies	Field address confirmed by Gribi 2007 Warehouse
4846001	1301 Yosemite Ave.	Buckeye Properties (RWD)	1300 Armstrong Avenue 1301 Yosemite Avenue	Yes	1954-1986	Lumber Yard and Sales	Lumber	Free product detected in well OW-3 installed by City on property as part of YFOC Project
		BWD Properties	1301 Yosemite Avenue	No	1986-1987	Developer. Lease Option to Purchase		
		L&K Debris Box Service, Inc.	1300B Yosemite Avenue	Yes	Aug-90	Stored Empty Debris Boxes	Empty Debris Boxes	
		Yosemite Rock & Lumber	1300B Yosemite Avenue Yard Space	No	1997-1999	Lumber & Equipment Storage	Lumber & Equipment	
		L&B Engineering	1300A Yosemite Avenue Yard Space	No	1999-2004	Storage	Storage	
		Pacific Diamond Charters		No	2001-2006	Parking of Buses	Buses	
		Bay Storage	1300B Yosemite Avenue Yard Space	No	2006-2008	Storage	Storage	
4846002	1320 Armstrong Ave.	Fog City Storage	1301 Yosemite Avenue Yard Space	Listed, but not at this address	2007-2009	Multi-tenant storage yard	Storage	Field address confirmed by Gribi 2007
		Buckeye Properties	1301 Yosemite Avenue	Yes	1954-1986	Lumber Yard and Sales	Lumber	
		BWD Properties	1320 Armstrong Avenue	No	1986-1987	Developer. Lease Option to Purchase		
		DTRS Recovery		No	2004 (two months)	Towing	Tow Trucks	Address obtained from EPA List, No address on RWD Tenant List
		Kwon Wo Ironworks	1320A Armstrong Avenue Yard Space	No	2004-2006	Iron Works Storage	Iron Works	
		Ace Tour & Charters	1320B Armstrong Avenue Yard Space	No	6/2005-11/2005	Bus Parking	Busses	
		Celtic Scaffolding	1320A Armstrong Avenue Yard Space	No	2007-2008	Scaffolding Storage	Scaffolding	
		Fog City Storage	1301 Yosemite Avenue	Listed, but not at this address	2007-2009	Multi-tenant storage yard	Storage	Field address confirmed by Gribi 2007
		Eurotech Construction	1320B Armstrong Avenue Yard Space	No	2009-2011	Construction Equipment	Construction Equipment	

Table 3
COMPILED TENANT INFORMATION
RWD ASSOCIATES
San Francisco, CA

APN	Address listed with APN at Assessors Website	Business Name	Address used by Tenant	On EPA List from 12-5-13?	Dates Tenant was on Site	Business performed onsite	Storage of:	Notes
4846003	1340 Armstrong Ave.	Buckeye Properties	1340 Armstrong Avenue	Yes	1954-1986	Lumber Yard and Sales	Lumber	
		BWD Properties		No	1986-1987	Developer. Lease Option to Purchase		
		Shaw Pipeline	1320 Armstrong Avenue Yard Space	No	1999-2009	Construction	Construction Material and Equipment	Field address confirmed by Gribi 2007
4846013	1335-1339 Yosemite Ave.	Buckeye Properties (RWD)	1335 Yosemite Avenue	Yes	1954-1986	Lumber Yard and Sales	Lumber	
		Architectural Wood Products	1335 Yosemite Avenue Warehouse	No	1963-1990	Millwork and fixtures	Fixtures	Warehouse
		BWD Properties	1335-1339 Yosemite Avenue	No	1986-1987	Developer. Lease Option to Purchase		
		James Pope	1335 Yosemite Avenue Warehouse	No	1990-1991	Cabinet Maker	Cabinets	Warehouse
		Tuyet Nguyen of City Debris		No	1990-2005	Debris Box Storage	Debris Boxes	Yard Space
		Scene 2		Yes	1992-2010	Movie scene construction	Scenery	Field address confirmed by Gribi 2007 Warehouse
		Bay City Repairs	1339 Yosemite Avenue	No	2002-2008	Carpentry & Stair Building		
		Multeen Transport	1335 Yosemite Avenue Yard Space	No	2003-2008	Vehicle Storage, construction equipment	Vehicle Storage, construction equipment	Field address confirmed by Gribi 2007 Yard Space
4846016	1375 Yosemite Avenue	One Hat One Hand		Yes	2010-2014	Scenery	Scenery	Warehouse
		Buckeye Properties (RWD)	1320 Armstrong Avenue 1339 Yosemite Avenue	Yes	1954-1986	Lumber Yard and Sales	Lumber	
		BWD Properties	1375 Yosemite Avenue	No	1986-1987	Developer. Lease Option to Purchase		
		Bay Area Metals	1320 Armstrong Avenue	No	2005-2007	Equipment & Metal Storage	Equipment & Metal Storage	Field address confirmed by Gribi 2007
Unknown	Unknown	Handy Dan, Inc.	1339 Yosemite Avenue Warehouse Space	No	2007-2010	General Contractor	Contracting Equipment	Field address confirmed by Gribi 2007
Unknown	Unknown	Tony Lopez	Yard Space	No	Oct-89	Concrete Contractor	Contracting Equipment	No address listed on RWD Tenant List
Unknown	Unknown	Marinship Construction	Yard Space	No	2000-2003	Storage Contractor's Equipment	Contracting Equipment	No address listed on RWD Tenant List
Unknown	Unknown	Jackie's Roofing Company	Yard Space	No	2009	Parking and Storage	Parking and Storage	No address listed on RWD Tenant List
Unknown	Unknown	Wonder Ice Cream	Yard Space	No	2009-2015	Vehicle Storage	Vehicles	No address listed on RWD Tenant List
Unknown	Unknown	Fox Marble	Yard Space	No	2013-2016	Marble Storage	Marble	No address listed on RWD Tenant List

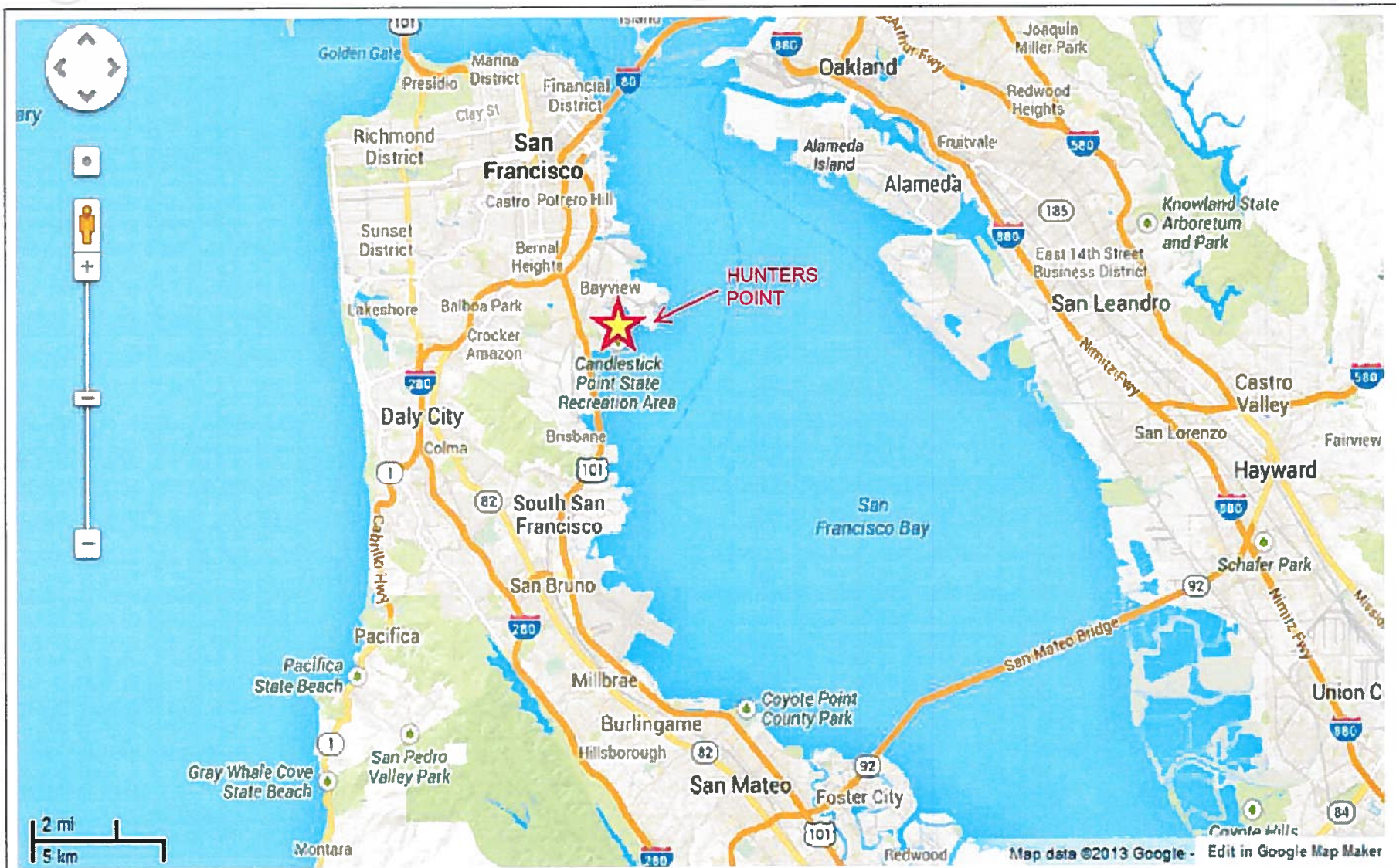


Figure 1
Location Map
RWD Properties
San Francisco, CA

Legend



Subject Property Location



See Map for Scale



Waterstone Environmental, Inc.
2936 East Coronado Street
Anaheim, California 92806

Drafted By:NB

Project No.: 12-176

Approved By: NB

Date: 08-10-2012

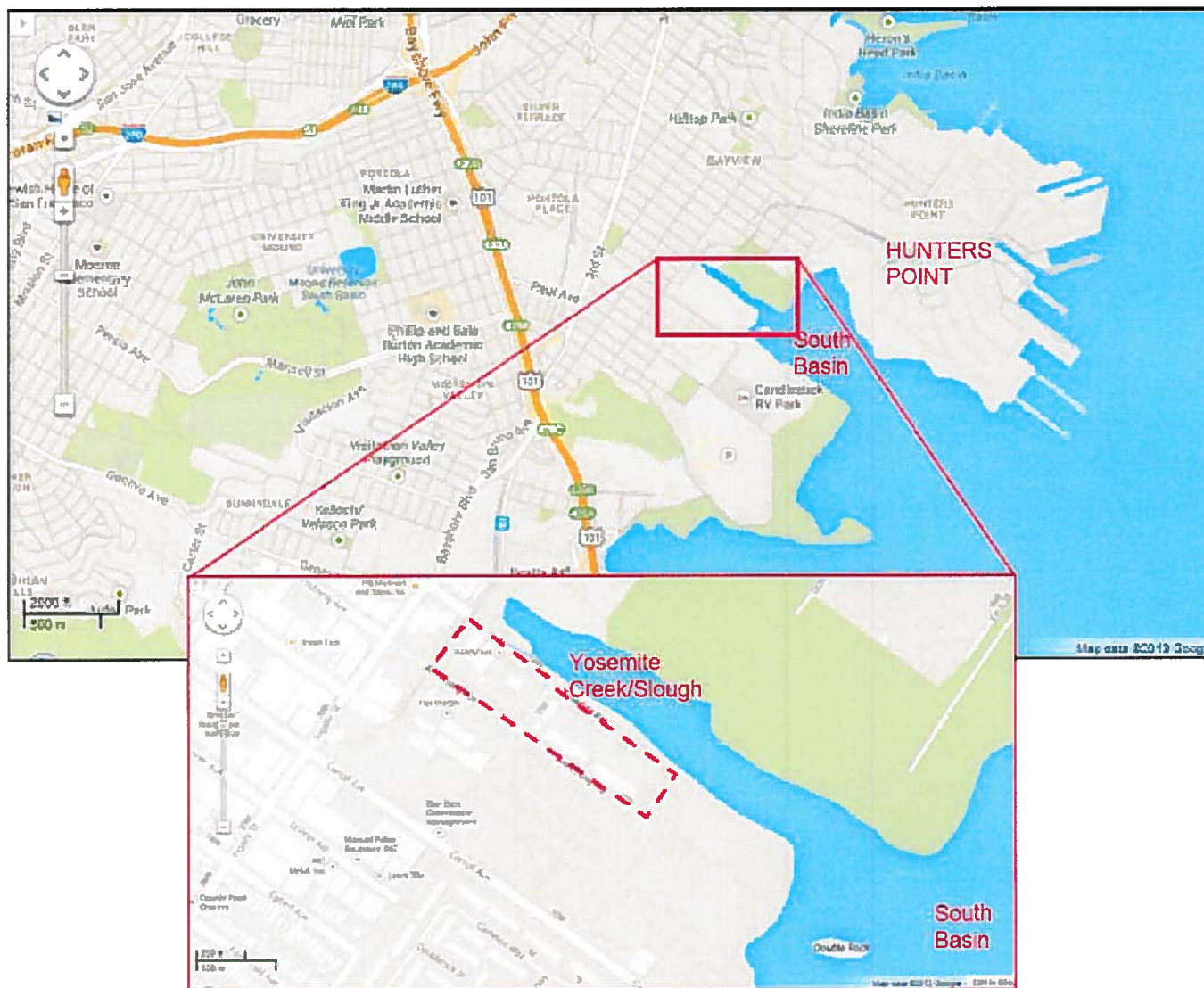


Figure 2
Subject Property Vicinity Map
 RWD Properties
 San Francisco, CA

Legend

 Subject Property Boundary



Waterstone Environmental, Inc.
 2936 East Coronado Street
 Anaheim, California 92806

Drafted By: NB

Project No.: 13-167

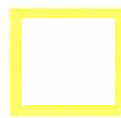
Approved By: NB

Date: 10-2013



Figure 3
RWD Ownership
RWD Properties
San Francisco, CA

LEGEND



RWD-Owned Properties



1" = 220'
 Approximate Scale



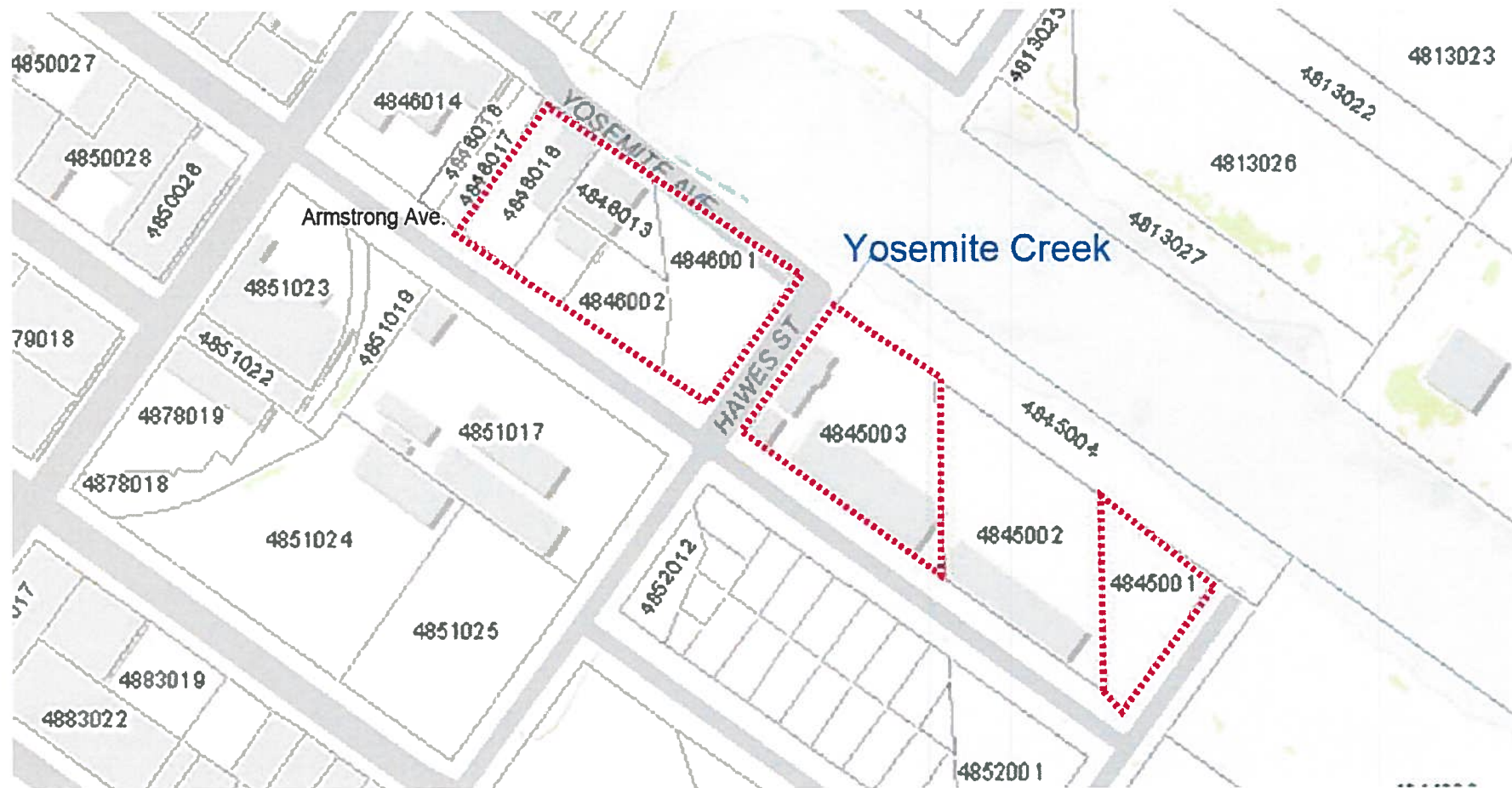
Waterstone Environmental, Inc.
 2936 East Coronado Street
 Anaheim, California 92806

Drafted By: NB

Project No.: 13-167

Approved By: NB

Date: 10-2013



Taken from: San Francisco Property Information Map System available online.

Figure 4
Assessor's Parcel Number
Map
RWD Properties
San Francisco, CA

Legend



Subject Property
Boundary



1" = 220'
Approximate Scale



Waterstone Environmental, Inc.
2936 East Coronado Street
Anaheim, California 92806

Drafted By: NB

Project No.: 13-167

Approved By: NB

Date: 10-2013

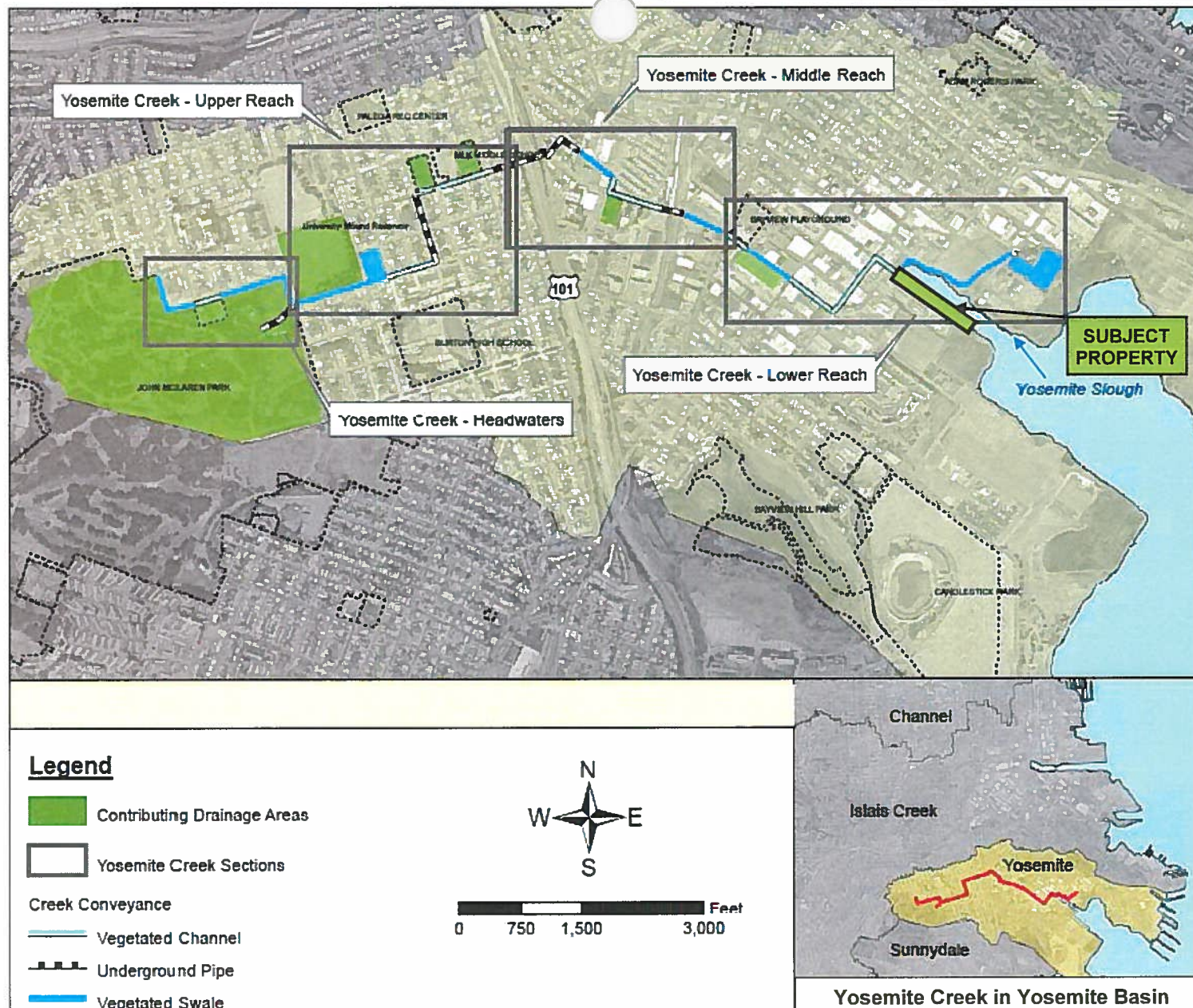


Figure 5
Yosemite Creek and
Drainage Area
 RWD Properties
 San Francisco, CA

Taken from: Figure 5.2 Yosemite Creek Daylighting Site Plan in LID BASIN ANALYSIS REPORT-YOSEMITE DRAINAGE BASIN, March 2009. Prepared for San Francisco Public Utilities Commission CS-825A As-Needed Wastewater Services Urban Watershed Management Program, Task Order 10 – LID Engineering Analysis

	Waterstone Environmental, Inc. 2936 East Conchito Street Anaheim, California 92806	
	Drafted By: NB	Project No.: 13-167
Approved By: ND	Date: 10-2013	

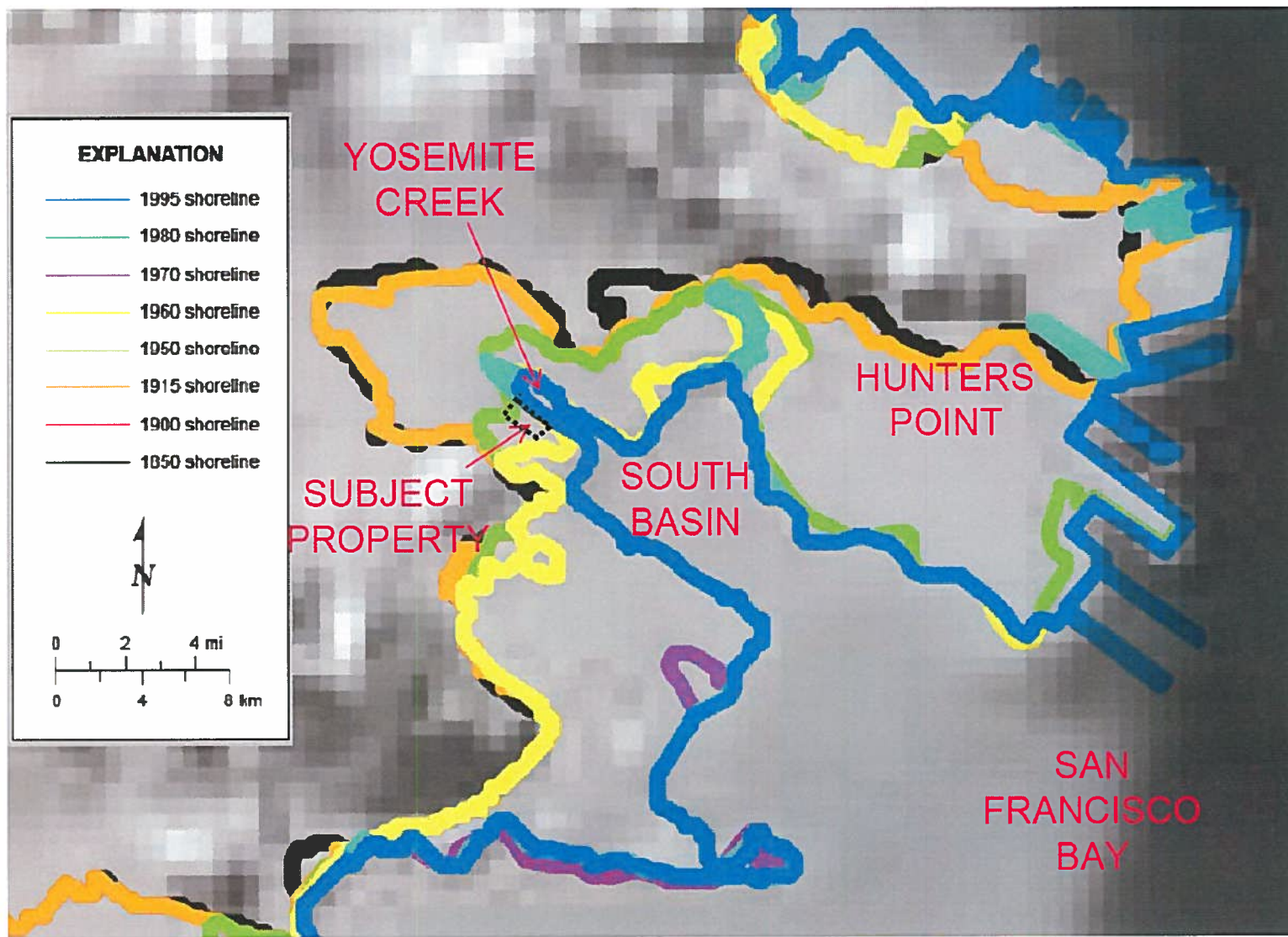


Figure 6
Historical Shorelines
 RWD Properties
 San Francisco, CA

Taken from Figure 1: Shoreline Progression in
 FINAL TECHNICAL REPORT, DETAILED MAPPING OF
 ARTIFICIAL FILLS, SAN FRANCISCO BAY AREA,
 CALIFORNIA by Wm. Lettis and Associates, Walnut Creek, CA,
 Sept. 2008. Prepared for USGS National Earthquake Hazards Reduction
 Program.



Waterstone Environmental, Inc.
 2936 East Coronado Street
 Anaheim, California 92806

Drafted By: NB

Project No.: 13-167

Approved By: NB

Date: 10-2013

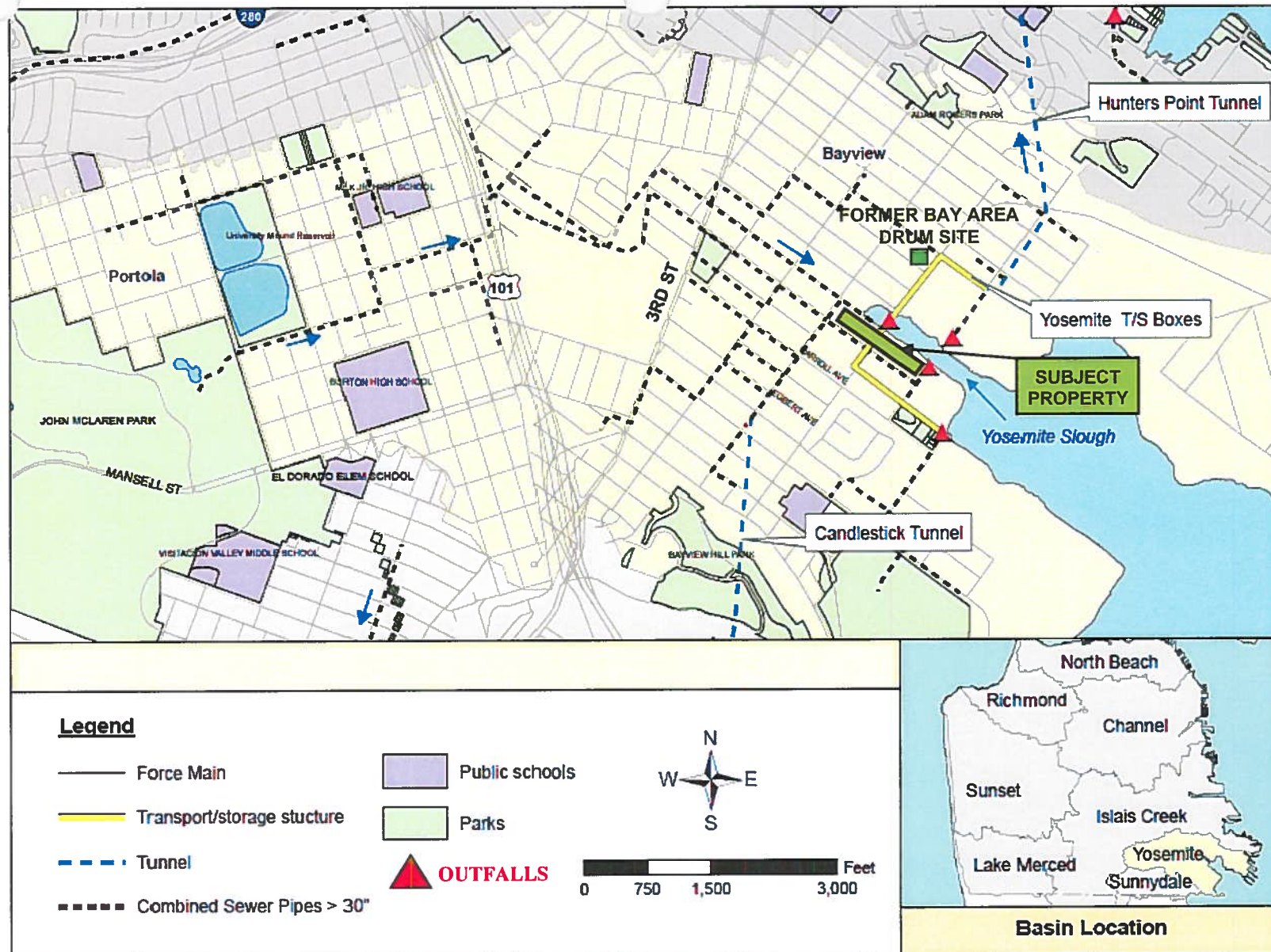


Figure 7
Yosemite Basin
Combined Sewer System
 RWD Properties
 San Francisco, CA

Taken from: Figure 2.2 Yosemite Basin Combined Sewer System in LID BASIN ANALYSIS REPORT-YOSEMITE DRAINAGE BASIN, March 2009. Prepared for San Francisco Public Utilities Commission CS-825A As-Needed Wastewater Services Urban Watershed Management Program, Task Order 10 – LID Engineering Analysis

	Waterstone Environmental, Inc. 2936 East Coronado Street Anaheim, California 92806	
	Drafted By: NB	Project No.: 13-167
	Approved By: NB	Date: 10-2013

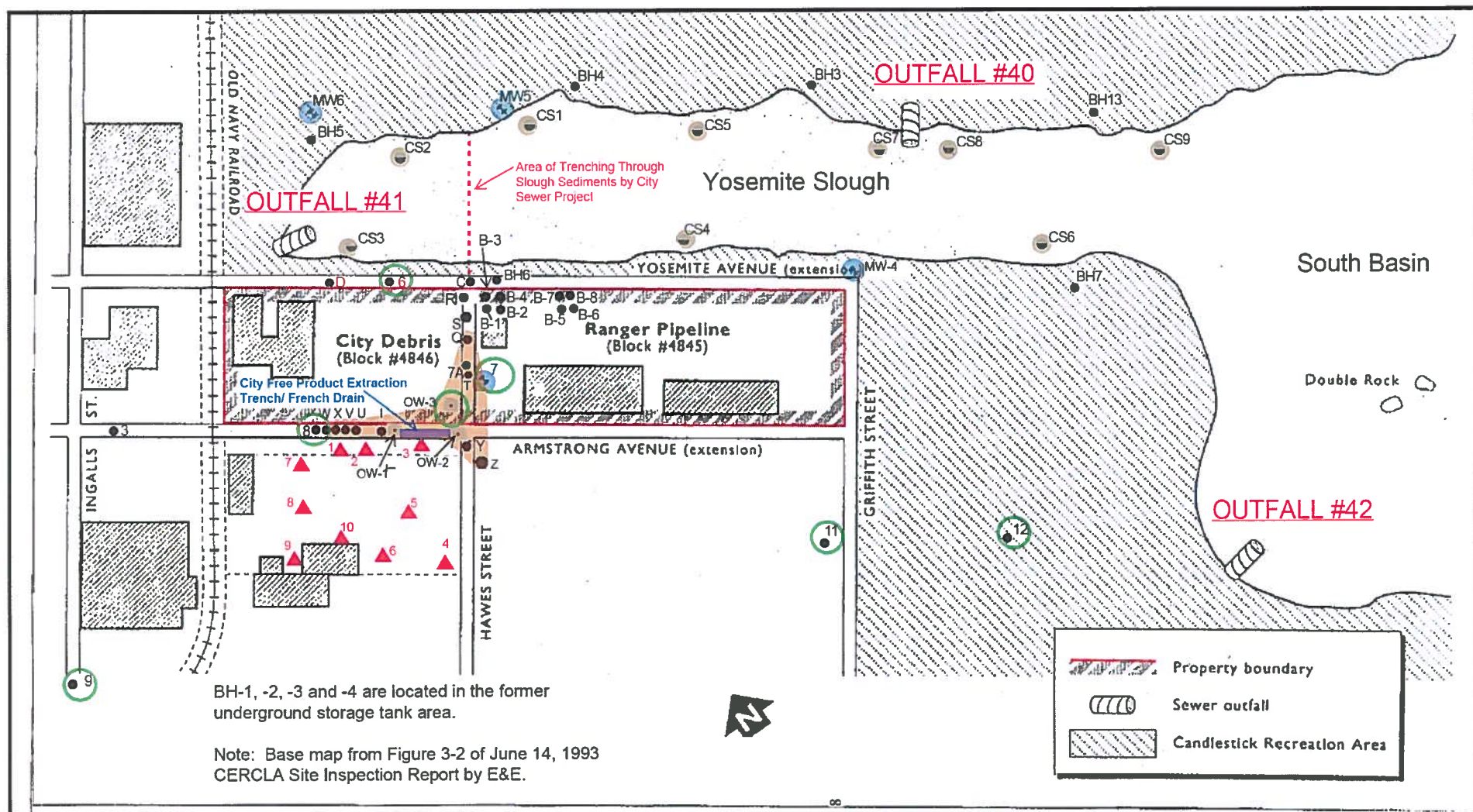
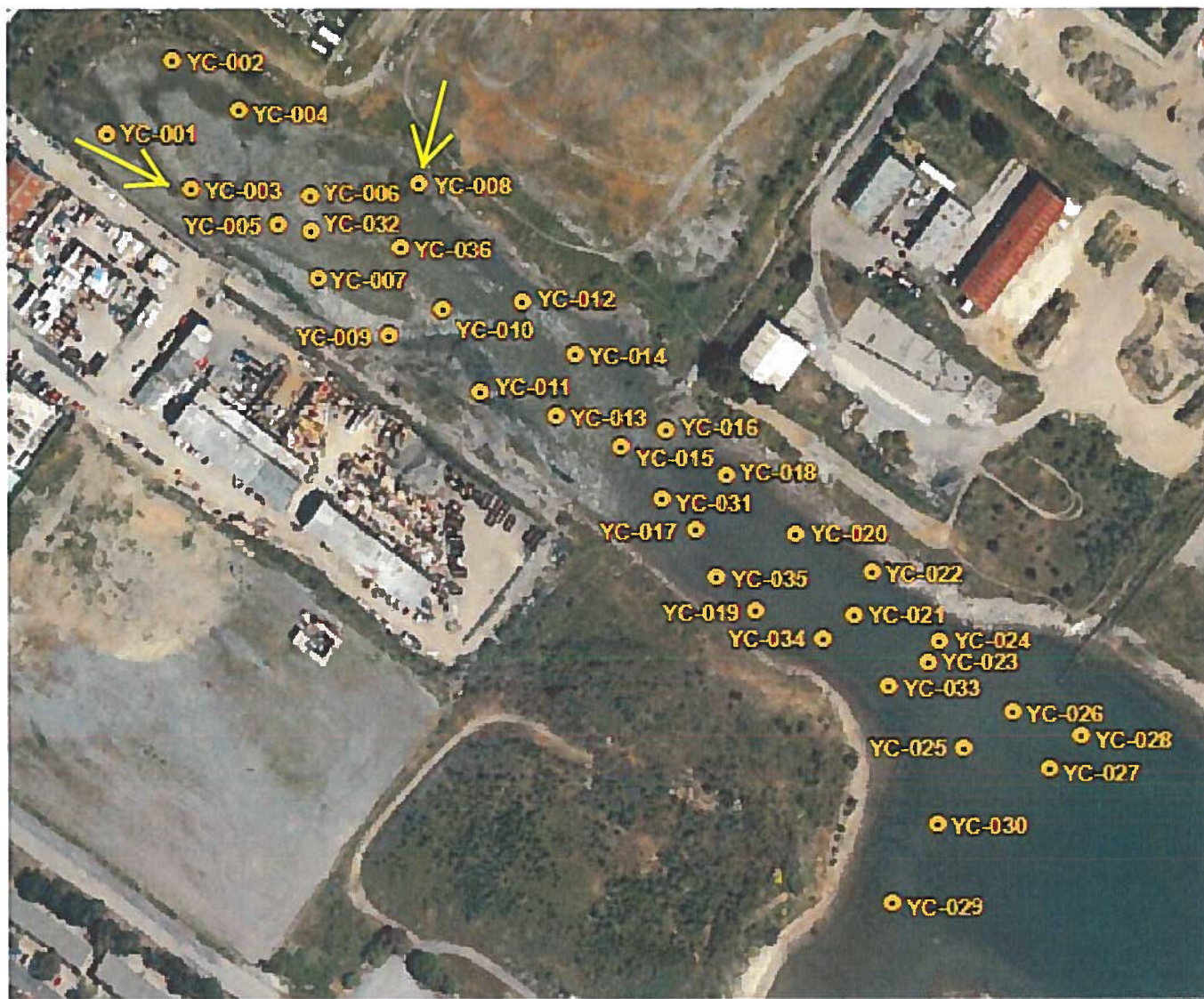


Figure 8
Sampling Locations
On and Near
the Subject Property

RWD Properties,
San Francisco, CA



LEGEND

● Sample location

Yellow arrows show location of sediment samples referenced in January 20, 2012 letter by PRP Group Attorney (Beveridge & Diamond)

Figure 9
Sediment Sampling
RWD Properties
San Francisco, Ca

Taken from: Figure 3, Sampling Location Mpa
in May 2011, Yosemite Creek Sediment
Removal Assessment Report Final,
prepared for EPA by Ecology and Environment,
Inc.

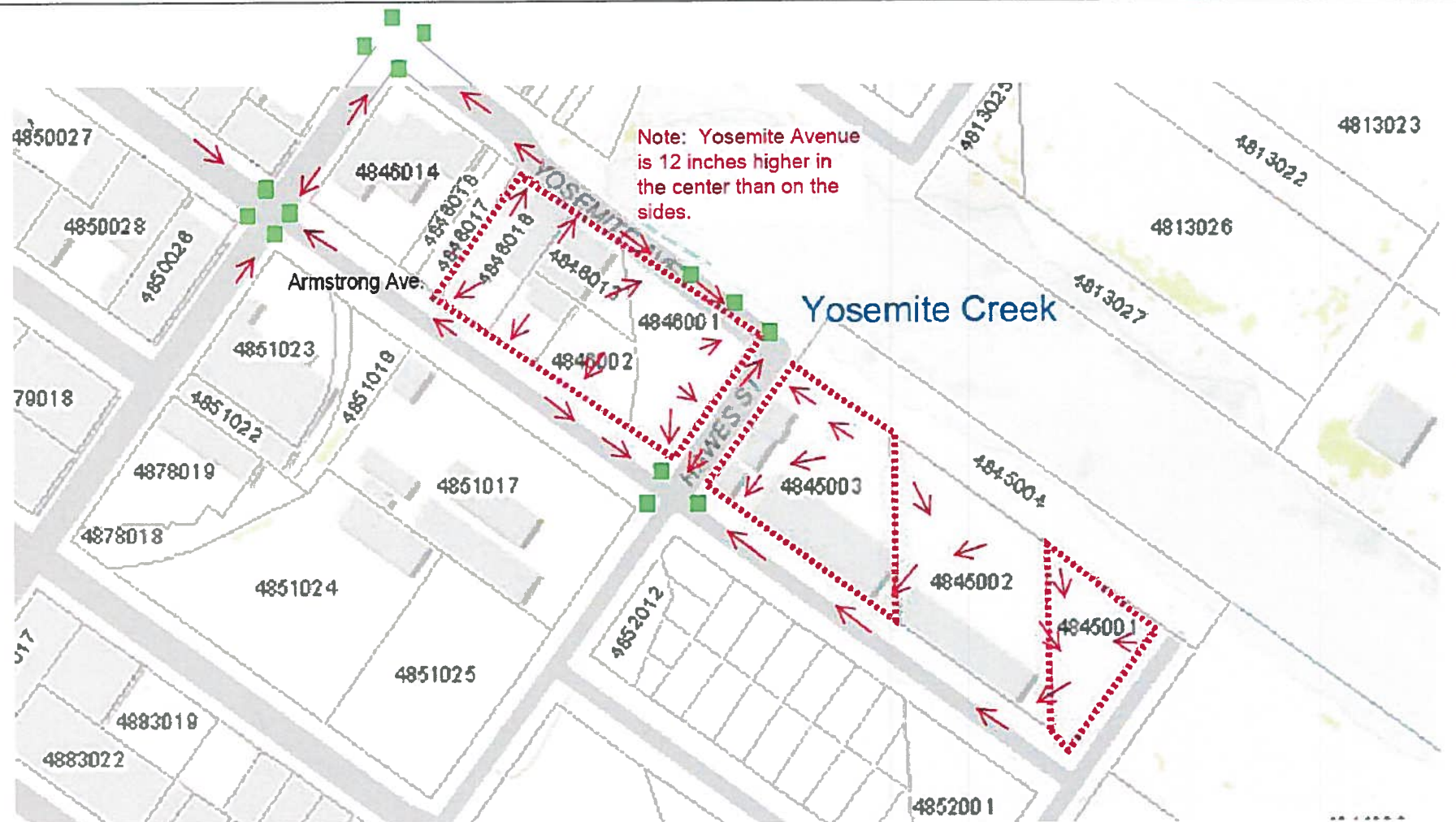
 Waterstone Environmental, Inc.
2936 East Coronado Street
Anaheim, California 92806

Drafted By: NB

Project No.: 13-167

Approved By: NB

Date: 10-2013



Base Map from: San Francisco Property Information Map System available online.

Figure 10
Subject Property
Drainage Map
 RWD Properties
 San Francisco, CA

Legend



Subject Property
 Boundary



Direction of Surface
 Water Flow



Storm Drain
 Locations



1" = 220'

Approximate Scale



Waterstone Environmental, Inc.
 2936 East Coronado Street
 Anaheim, California 92806

Drafted By: NB

Project No.: 13-167

Approved By: NB

Date: 10-2013

Appendix A1
RWD Files – Steve Mullinix Deposition Transcripts
Excerpts

1 IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA
2 IN AND FOR THE COUNTY OF SAN FRANCISCO

3 ---o0o---

4
5 ORIGINAL
6

7 REGINALD RICCI, ANITA RICCI,
8 BUCKEYE PROPERTIES, A
9 PARTNERSHIP,

10 Plaintiffs

11 vs.

CASE NO. 904073

12 HOMER J. OLSEN, INC., A
13 CORPORATION, CITY AND COUNTY
14 OF SAN FRANCISCO, DOES 1 - 50,
15 INCLUSIVE,

16 Defendants.
17

18 DEPOSITION OF STEVE MULLINNIX

19 Taken before ROSE McHONE, a Certified Shorthand Reporter

20 In and for the County of Contra Costa

21 State of California

22 September 14, 1993

23 10:15 A.M.

24 ---o0o---

1 performed to expose these contaminated areas?

2 A. Yes.

3 Q. Did it appear to you, you being present, that
4 the area above the contaminated level was also
5 contaminated?

6 A. No.

7 Q. Could you describe what the soil conditions
8 appeared to be when the contaminated area was exposed?

9 MR. NORMAN: Could you read that back, please?

10 (Record read.)

11 MR. KEITH: Q. After the overburden was
12 removed, you now have an area that appears to be where
13 the contamination starts or is most severe. Would you
14 describe what the soil conditions appear to be? Was it
15 fill; was it natural soil; was it other materials; if you
16 recall?

17 A. I would categorize it as industrial fill.

18 Q. Did you ever learn the source of that
19 industrial fill?

20 A. The consultant's report indicated several
21 potential sources of the fill. To my knowledge no
22 follow-up actions were taken by the City to identify
23 potentially responsible parties and be compensated for
24 the cost of any cleanup or soil management cost. So, I
25 do not think a responsible party was hung with the cost

1 of any mitigation efforts.

2 MR. NORMAN: Could I clarify something? What
3 do you mean by industrial fill, if you will?

4 THE WITNESS: Well, to me industrial fill means
5 material that's not native. It was placed there as
6 opposed to just soil or rock or other things. I call
7 this industrial fill because it contains vast quantities
8 of scrap metal, things that appear to be commercial-type
9 items, hospital supplies, wire rope, parts of rail cars,
10 glass, numerous barrels, water heaters, large pieces of
11 unidentified metal. So, that's why I say industrial fill
12 as opposed to simple rocks or plain old soil.

13 MR. KEITH: Q. Do you recall who the
14 consultants identified as potential parties for this
15 fill?

16 A. The consultant's reports I believe indicated
17 that lumber yard activities may have been the most likely
18 source of the creosote material.

19 Q. What about the other material, the industrial
20 fill?

21 A. I don't think the consultant's reports
22 speculated as to the source of that material.

23 Q. Was there any investigation made as to how the
24 creosote got into the soil, a specific source?

25 A. No. My observation was particularly during the

1 excavation phase. There were numerous drums containing a
2 wide variety of petroleum products, some of which
3 appeared to be intact. I was not able to, myself,
4 specifically tie any source of creosote or any other
5 products to any specific source.

6 Q. Was the creosote found in any of the drums,
7 were any of the drums intact when they were exposed; if
8 you recall?

9 A. Surely not. They did the process of
10 excavation -- in the process of excavation with a large
11 backhoe you would find pieces of metal, much of which
12 were drums, much of which had materials in it which to
13 some degree would be held in the container while it was
14 in the ground.

15 Q. Did any of those containers appear to have
16 creosote in them?

17 A. None that I could see that specifically
18 contained only creosote.

19 Q. Did you have any occasion to go on to other
20 portions of Mr. Ricci's property to see if there was any
21 evidence of creosote contamination?

22 A. I did.

23 Q. Was there any surface evidence of creosote?

24 A. None that I could see.

25 Q. If creosote is poured on the surface ground and

1 it goes past through the surface level, does it continue
2 to continue to contaminate the layers that it goes
3 through?

4 MR. NORMAN: Objection. You are calling for an
5 expert witness's testimony.

6 MR. KEITH: In his experience. As responsible
7 for the toxic.

8 MR. NORMAN: Have you ever seen such an event?

9 THE WITNESS: I've not seen or observed any
10 application of creosote. I usually find materials
11 present in a wide mix and as a general observation would
12 think that creosote is pretty volatile. If you poured it
13 on the ground, of what the new version of creosote is,
14 much of it would, much of it would be absorbed in
15 whatever you are putting it into. I would assume to some
16 degree it would sink down and whatever soil articles or
17 cellulose parts or what have you, would tend to absorb
18 some of it. I wouldn't think it would sail directly from
19 grade down to a certain level. There is some filter
20 action that would probably occur. But I've never worked
21 on the site where the soil contamination was creosote,
22 such as a wood-preserving facility. I just don't have
23 the experience to give you the best answer on that.

24 MR. KEITH: Q. When this area of Hawes Street
25 was excavated do you recall whether or not any old

1 newspapers were located among the industrial fill?

2 A. Yes.

3 Q. Do you recall that some of them dated from
4 approximately World War II?

5 A. Yes. I recall being surprised by them and for
6 at least a while I kept some of them and they -- I don't
7 remember the exact date, but I seem to feel they were
8 maybe from 1944 and 1945.

9 MR. NORMAN: Were those the Chronicle?

10 THE WITNESS: I don't remember.

11 MR. KEITH: Q. And that was found among the
12 materials that were in this industrial fill property?

13 A. I remember these particular pieces of paper
14 being pressed, some of the sheet metal scrap.

15 Q. Was the creosote contamination also at the same
16 level or was it below it?

17 A. A mixture.

18 Q. Some above it and some below; is that a fair
19 way to describe it?

20 A. Yes.

21 Q. Did the consultant's report indicate who had
22 placed this fill in this area of Hawes Street?

23 A. I don't remember. I don't believe they made
24 such a statement specifically assigning presumed
25 responsibility. The reason we were doing all of this was

1 everyone knew it was a fill area. This is what was
2 driving the preconstruction testing.

3 Q. This area had been bay land or bay water until
4 sometime about the time of World War II?

5 A. I know it was at one time part of the bay and I
6 believe it went to a gradual landfill process to its
7 present general boundaries.

8 Q. You are aware that this area is adjacent to
9 Hunter's Point Naval Shipyard?

10 A. Yes.

11 Q. And are you aware that there was a railroad
12 line in the area of this project which surrounded the
13 shipyard at one point in time?

14 A. I am aware. I remember then, I believe the
15 information Mr. Ricci provided me. I had not located
16 that information on my own.

17 Q. Do you recall whether or not that was covered
18 in the ERM report?

19 A. I don't remember.

20 Q. Getting back to the Hawes Street area. Can you
21 describe what remediation plan was to occur when the
22 project first started for this area? What work was going
23 to be required to be done in this particular area that
24 you've identified as the one that had the problem from
25 the original ERM report?

1 A. Our initial observations were based on drilling
2 approximately eight-inch holes spaced a few hundred
3 feet apart which, upon visual observation, contained
4 what I referred to as floating project petroleum
5 hydro-products, at a certain elevation. The first
6 recommended remedial action was to attempt to recover as
7 much of this floating product as we could prior to
8 construction. A series of wells were installed. We
9 began pumping material, pumping at the top of the water
10 table into water storage tanks where we made an effort to
11 capture heavy floating products and drum it and dispose
12 of it with the idea that we hoped to minimize the
13 problems that might be encountered during excavation.
14 So, this was all pre-excavation.

15 Also pre-excavation we then went to a system
16 of larger recovery wells, if you will, and a French
17 drain-type trench with a gravel bed, which was installed
18 on Armstrong, that we hoped to speed the process of
19 recovering petroleum products.

20 Q. Could you describe what a French drain is?

21 A. To me a French drain would be a cut, a trench.
22 You fill it with gravel and the idea being that this
23 allows water to move in the space between the gravel more
24 freely than it might in the natural recurrent soil.

25 Q. Let's start with the initial wells that were

1 installed. You said this was prior to the excavation
2 work in the area of Armstrong, Hawes and Yosemite?

3 A. Yes.

4 Q. Do you recall how many wells were installed?

5 A. Three.

6 MR. KEITH: Let's have this marked as
7 Plaintiff's next in order, a document entitled,
8 "Observation Wells."

9 (Whereupon, a photocopy of a
10 document entitled, "Observation
11 Wells," undated, consisting of
12 one page, was marked as
13 Plaintiff's Exhibit No. 2 for
14 identification.)

15 MR. KEITH: Q. Have you seen this Exhibit 2
16 before?

17 A. I don't specifically remember it.

18 Q. You recall that that was part of the ERM
19 supplemental report for the --

20 A. I have no reason to doubt that's true.

21 Q. Of those sites marked OW1, 2 and 3, are those
22 the three?

23 A. Approximately. How I would define them,
24 approximately locations.

25 Q. And these are the three initial wells that were
installed?

A. Yes.

1 Q. Was there a specific plan prepared for removing
2 this contaminated water to these three wells, that you
3 are aware of?

4 A. I'm not sure what you mean by specific.

5 Q. Was there a de-water plan prepared by an
6 engineer with respect to pumping this water out of the
7 ground, out of these three wells that you identified?

8 A. I believe the person who approved the ERM plan
9 happened to be an engineer, but I don't know that for a
10 fact.

11 Q. You don't recall seeing something called
12 de-water plan or de-watering report prepared by an
13 engineer with respect to these initial three wells?

14 A. I don't.

15 Q. When you said that later on larger wells were
16 installed in the same general area --

17 A. Yes.

18 Q. And additional wells?

19 A. No.

20 Q. Just the same, basically the same three
21 locations?

22 A. No.

23 Q. Would you explain what occurred?

24 A. This location shown for OW3 is pretty good.
25 OW2 -- this is where I would draw them closer to where

1 they really were. I think this is a graphic
2 representation as opposed to trying to be something
3 that's exactly to scale.

4 Q. So, you have drawn three red dots, numbered
5 them 1, 2 and 3 and those are where you recall the three
6 wells were located?

7 A. Initially. Subsequently wells -- most of the
8 product recovery seemed to come from wells 1 and 2. So,
9 we abandoned these and dug a long trench, inserted large
10 metal casings, perhaps 36 inches in diameter with slits,
11 vertically, put gravel in it and began pumping mostly
12 from Sites 1 and 2 and continued 3 as it was before.

13 Q. So the record is clear, we've all watched what
14 you've drawn. It's a little hard for the record to
15 reflect that. You've indicated that along Armstrong
16 Street on the side closest to Bancroft Avenue was
17 trenched, was dug?

18 A. Yes.

19 Q. And about how deep was that trench, if you
20 recall?

21 A. Ten to 15 feet is my best guess.

22 Q. And how long was that trench, approximately?

23 A. A hundred and fifty feet is a guess.

24 Q. Is that your best recollection about how long
25 it was?

1 A. Yes.

2 Q. Installed vertically into the bottom of that

3 trench. Were these 36-inch diameter cylinders?

4 A. Yes.

5 Q. Were those installed by pile drivers or some

6 other means? How were they installed?

7 A. They were lifted into the whole by heavy

8 equipment and then gravel was poured around them.

9 Q. So they were installed vertically or

10 horizontally?

11 A. Vertically.

12 Q. So there is a hole at the bottom of the trench

13 in which to place -- how long were these casements?

14 A. Maybe 15 feet.

15 Q. So they would be to the bottom of the trench up

16 to the surface?

17 A. They stuck a little bit above grade.

18 Q. And they would be filled with gravel at the

19 bottom?

20 A. As was the whole trench.

21 Q. And then you pump out from what portion of

22 that?

23 A. Inside the steel casings a larger pump was

24 placed, a so-called trash pump.

25 Q. So instead of having two eight-inch holes, had

1 that material?

2 A. Yes.

3 Q. And when the system had enlarged to the trench
4 and the casement method, what was done with the water
5 that was removed?

6 A. Same as before.

7 Q. Were there any records kept of how much water
8 was pumped out of the ground?

9 A. No.

10 Q. When the larger wells with the French drains,
11 when the French drain was installed, do you know whether
12 or not a new de-water plan was prepared?

13 A. I do not believe so, but I don't know.

14 Q. Was there any indication of contamination with
15 this creosote-type material found at the intersection of
16 Yosemite and Hawes; do you recall?

17 A. Do you mean where creosote would go if it met
18 Hawes? See, I tend to think creosote ending -- I think I
19 understand what you are saying. I tend to think that
20 creosote ends, really, at the head of the canal. If you
21 are referring to where they would join in Yosemite and
22 continue at a separate line, no.

23 Q. Did the contamination end about somewhere in
24 the middle of the block of Hawes Street between Armstrong
25 and Yosemite?

Appendix A2
RWD Fiels – Laboratory Analytical Data Sheets and
Chain of Custody for Free Product Sample form OW-3
(MW-1)

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (415) 222-3002

FAX (415) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 211

Received: 06/07/89

Reported: 06/19/89

Job #: 70875

Attn: George Wilson
Tom Amen
Yosemite & Armstrong
San Francisco, CA.

Lab ID #: 70875-1
Client ID: MW-1 Monitor Well

ANALYSIS:

		MDL
PCB's as Aroclor 1260	3.7 mg/kg	0.5
Halogenated	ND<1.0 mg/kg	1.0


MDL: Method detection limit; Compound below this level would not be detected.

QA/QC: Spike Recovery for PCB's: 90%

METHODS:

PCB Method EPA 8080

Halogenated by EPA 8010


Jaime Chow
Laboratory Director

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806

PHONE (415) 222-3002

FAX (415) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 211

Received: 06/07/89

Reported: 06/09/89

Job #: 70875

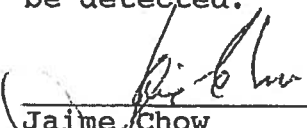
Attn: George Wilson
Tom Amen
Yosemite and Armstrong
San Francisco, CA.

Analysis Method EPA 6010
Prep Method EPA 3050
mg/kg

Lab ID #: 70875-1
Client ID: MW-1 Monitor Well

METAL		MDL	% SPIKE RECOVERY
Tl	ND<2.2	2.2	70
As	ND<2.2	2.2	84
Hg	ND<5.0	5.0	84
Se	ND<5.0	5.0	78
Mo	ND<1.0	1.0	86
Sb	2.0	2.0	80
Zn	14.2	0.15	74
Cd	ND<0.012	0.012	78
Pb	16.9	1.1	80
Co	0.7	0.5	88
Ni	34.9	0.65	82
Cr	6.9	0.15	82
V	42.9	0.1	88
Be	ND<0.025	0.025	86
Cu	12.1	0.1	86
Ag	ND<0.1	0.1	76
Ba	8.2	0.1	92

MDL: Method detection Limit: Compound below this level would not be detected.


Jaime Chow
Laboratory Director

OUTSTANDING QUALITY AND SERVICE
CALIFORNIA STATE CERTIFIED LABORATORY

10101

70875

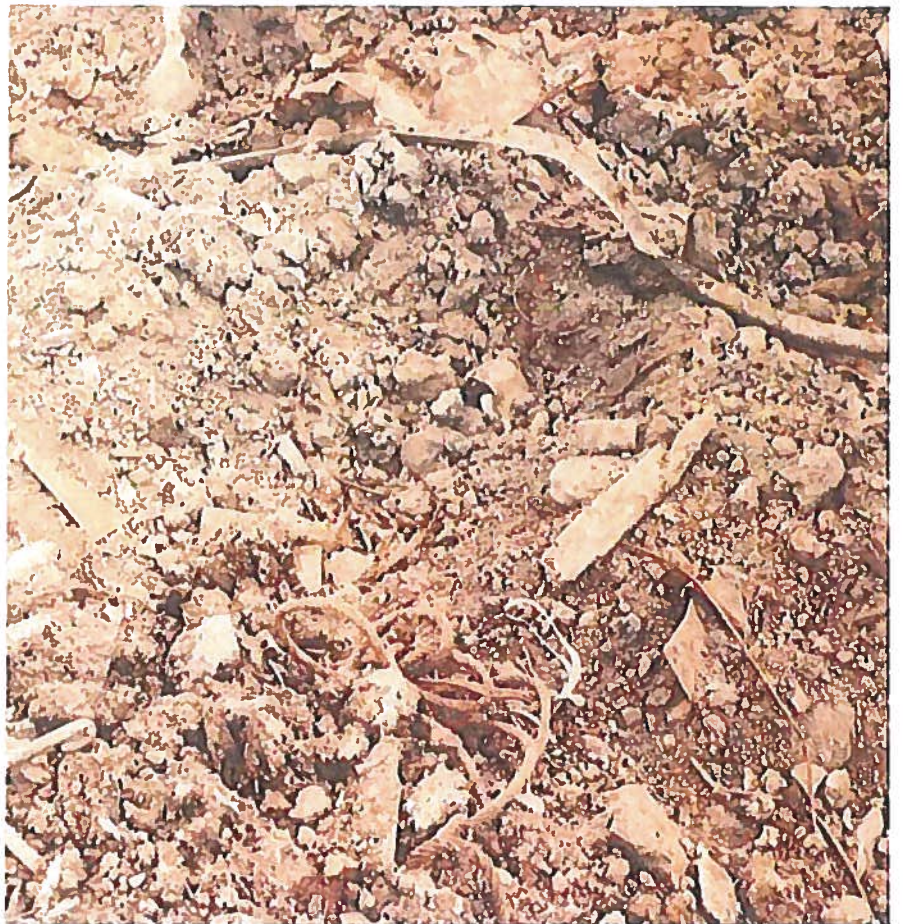
[illegible]

Appendix A3
RWD Files – Photographs of Sewer Upgrade Project
1986



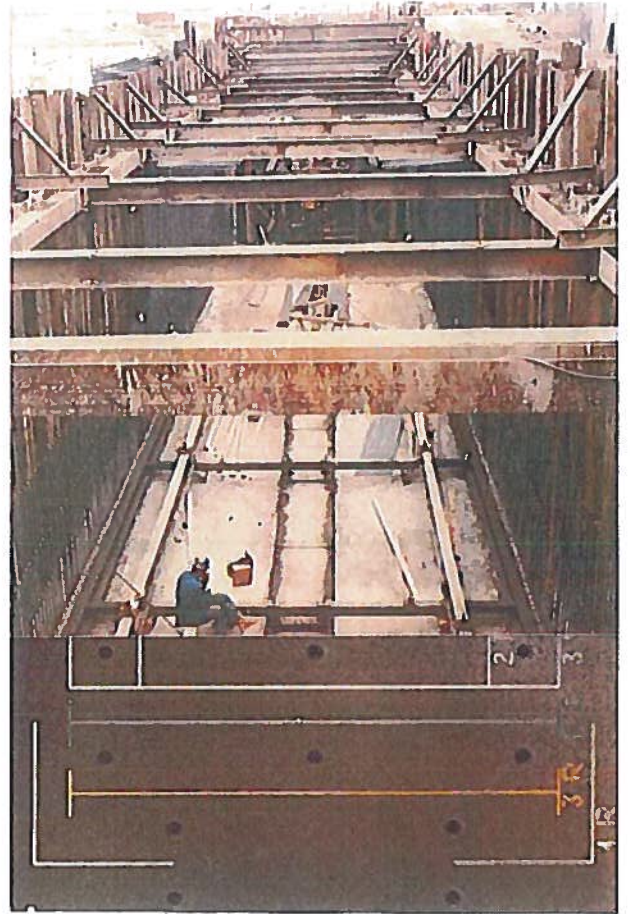
WRECK PIE EXCAVATED
FROM SITE.

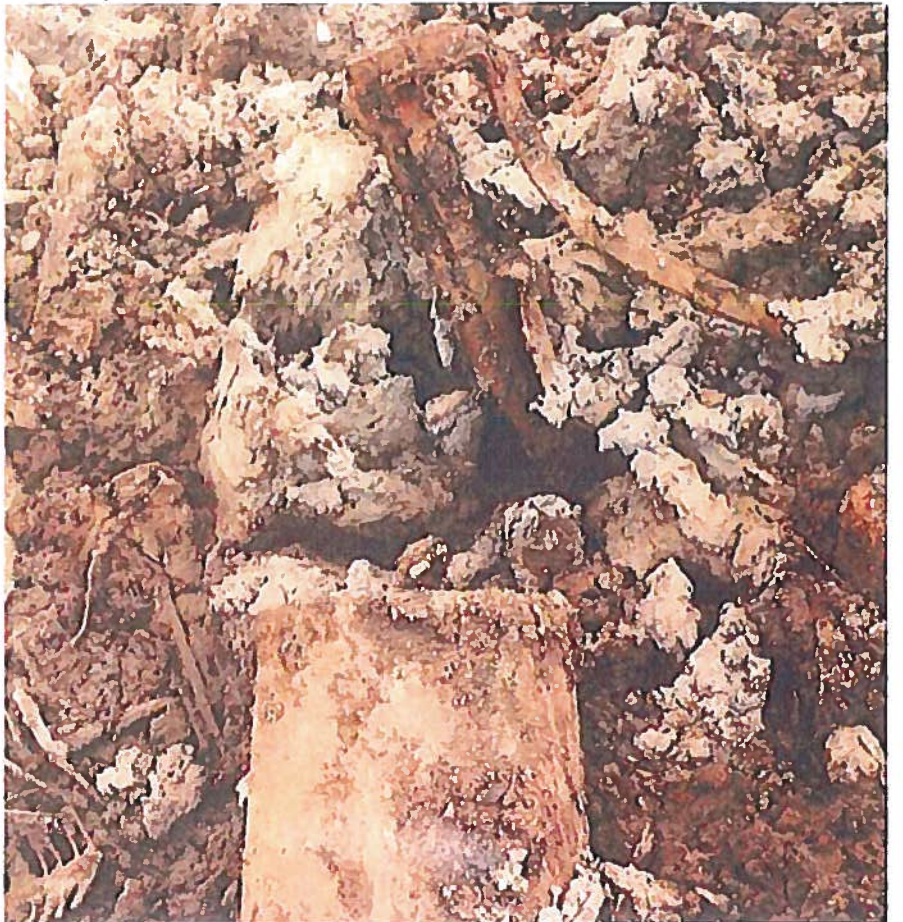
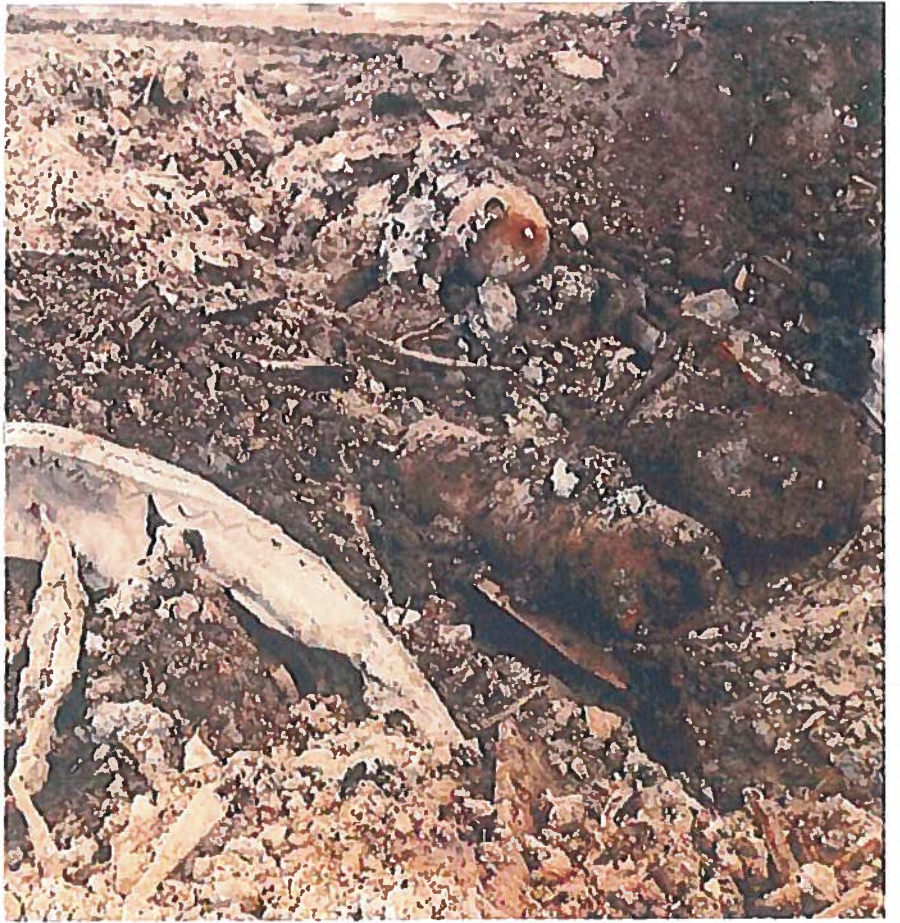






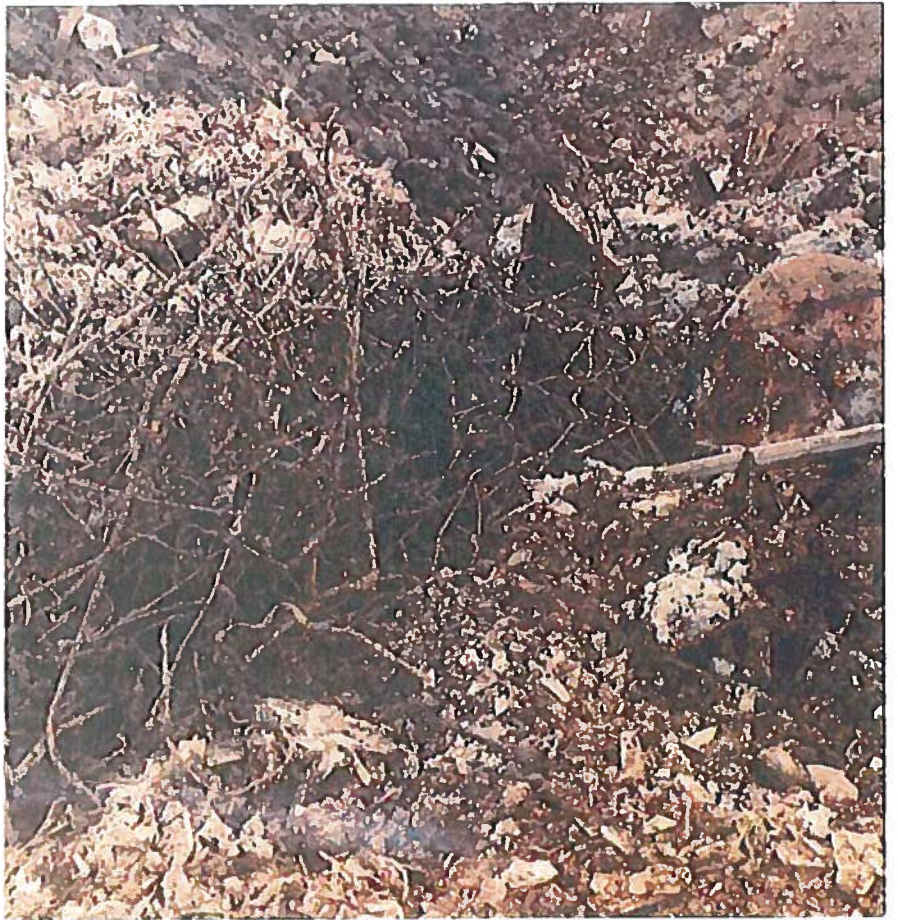




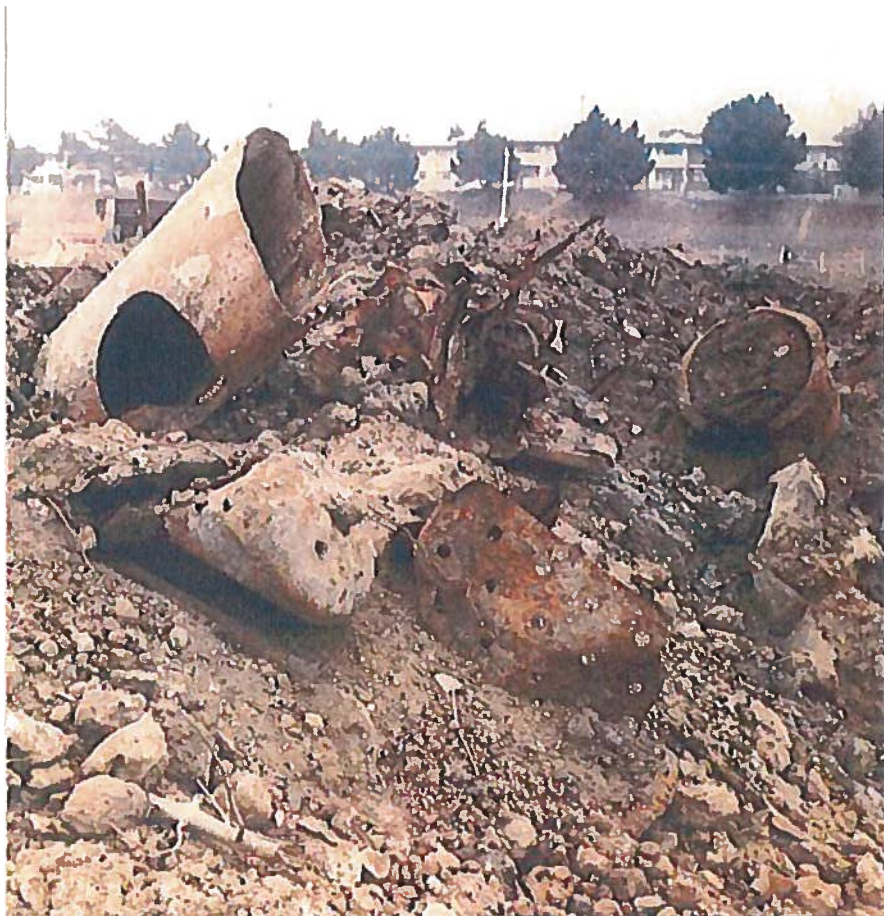


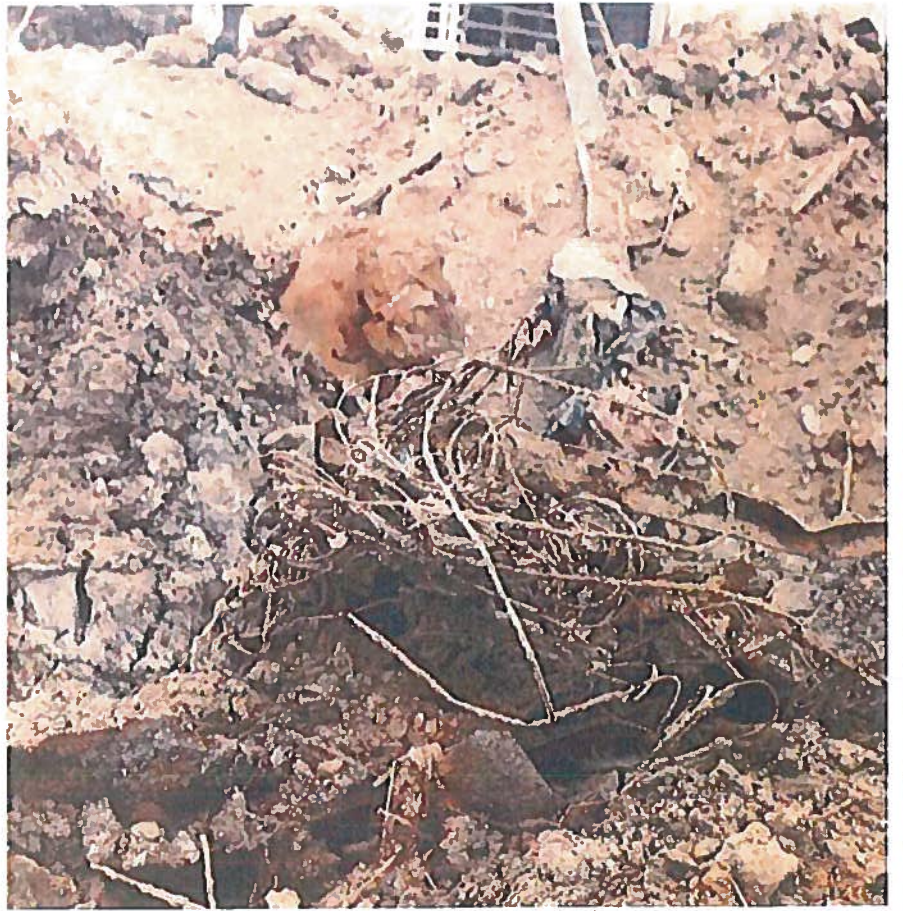








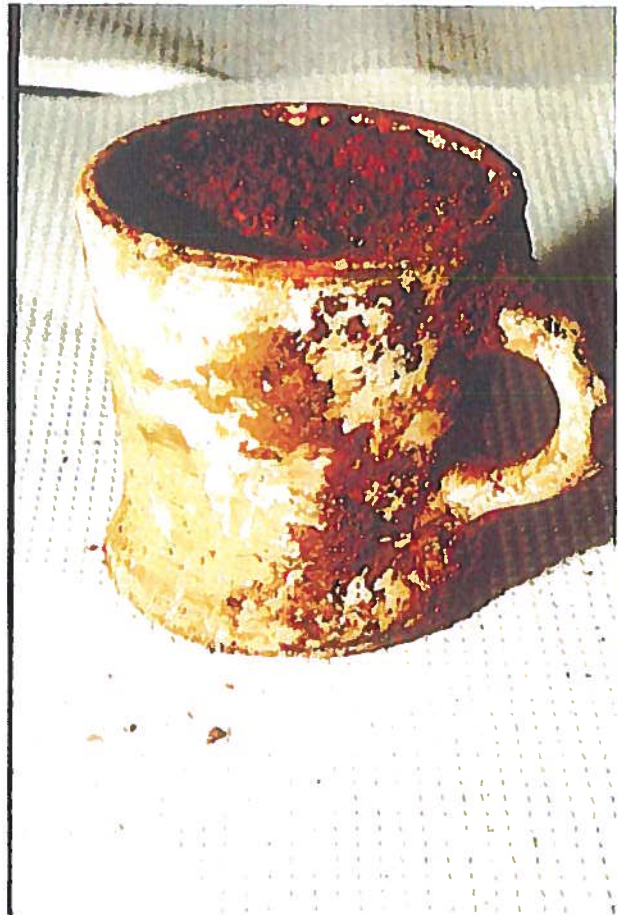
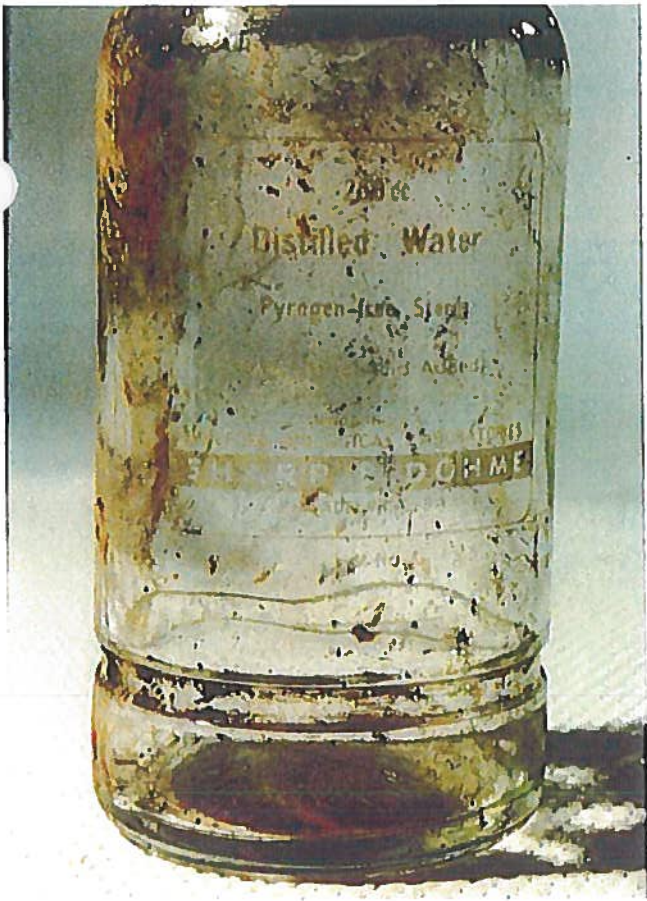


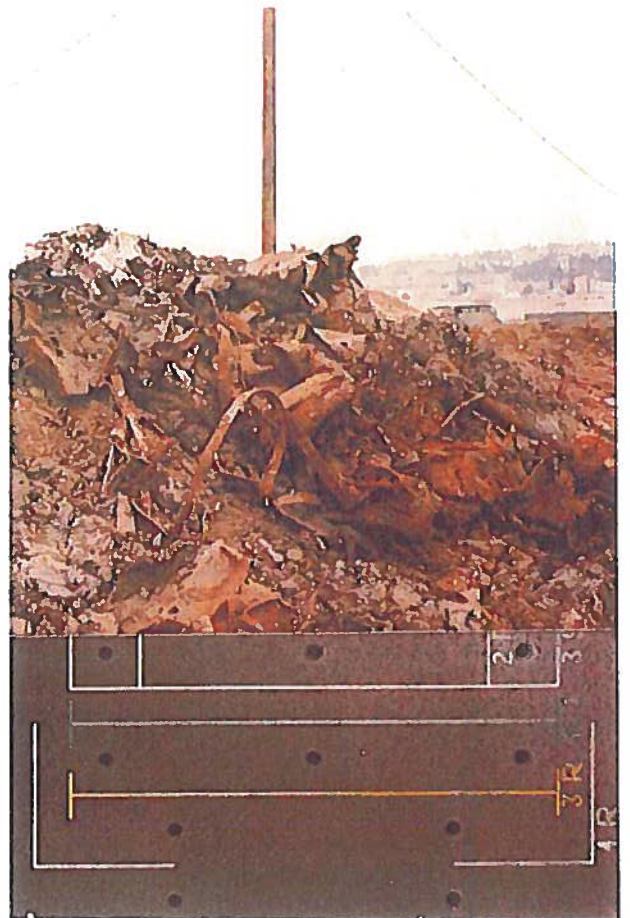
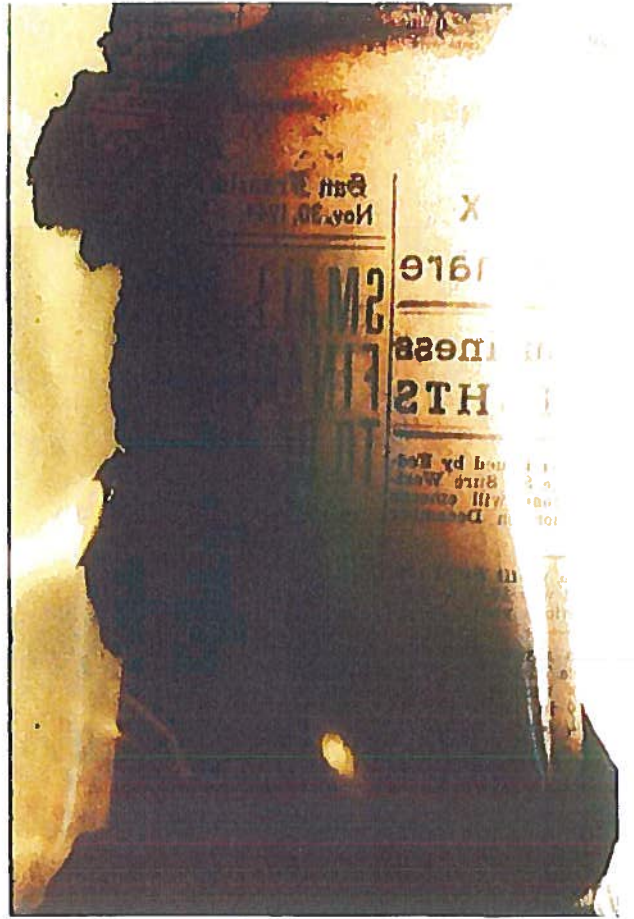
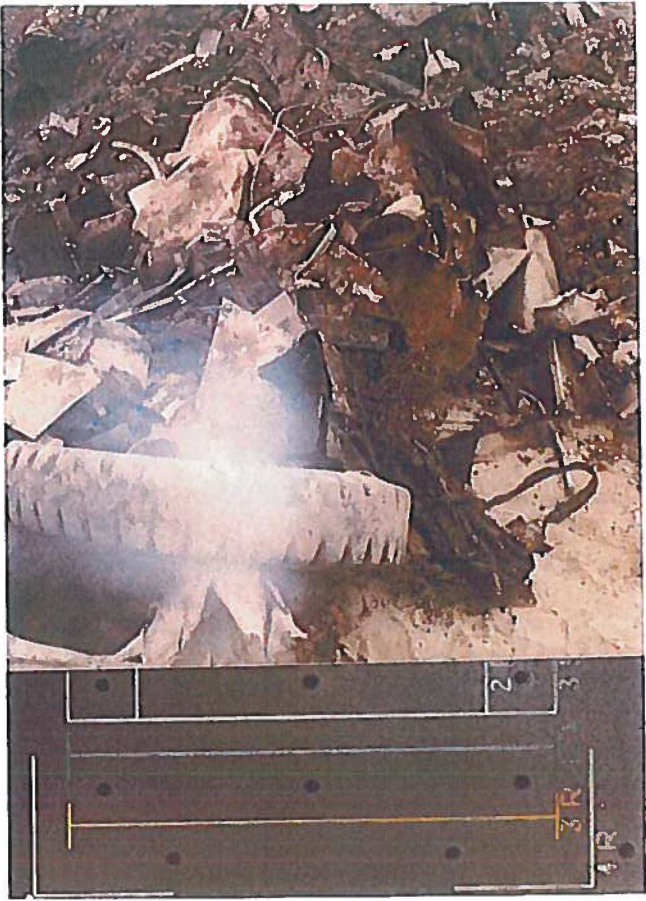


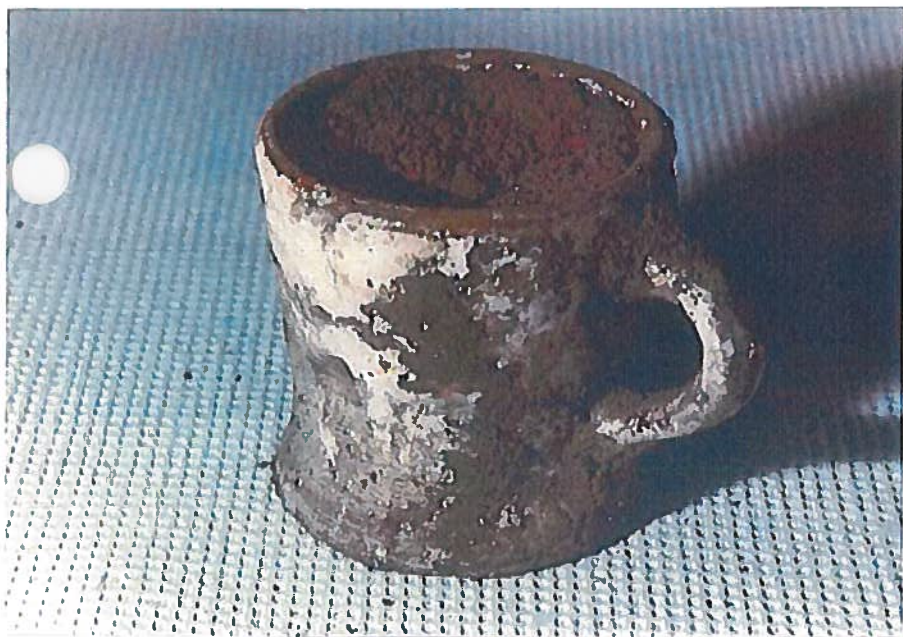




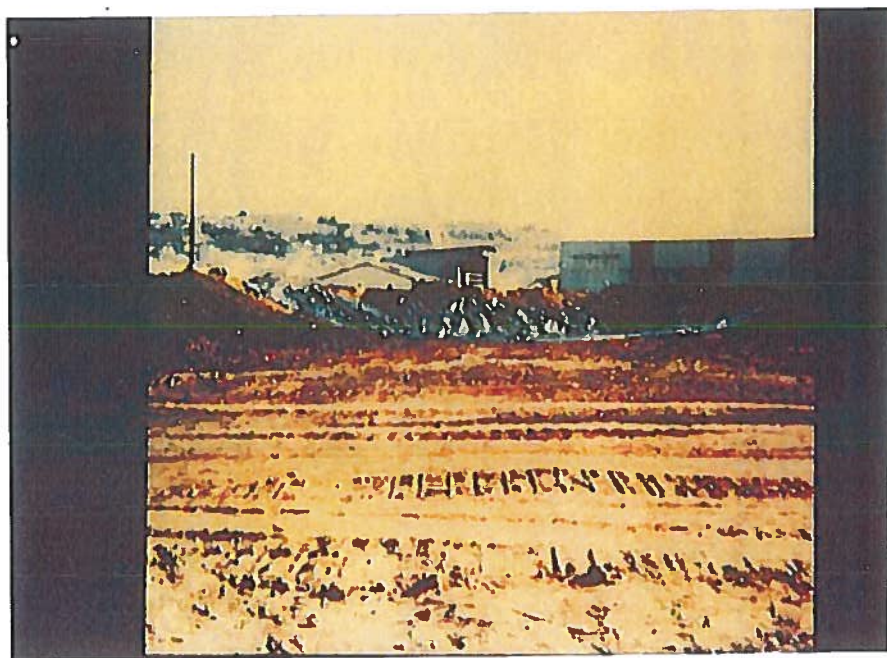
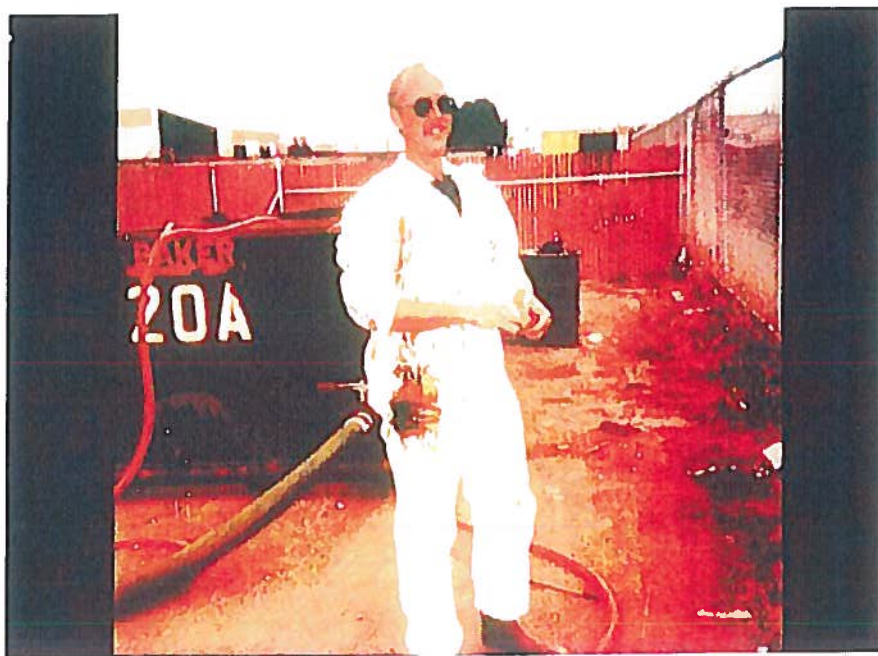


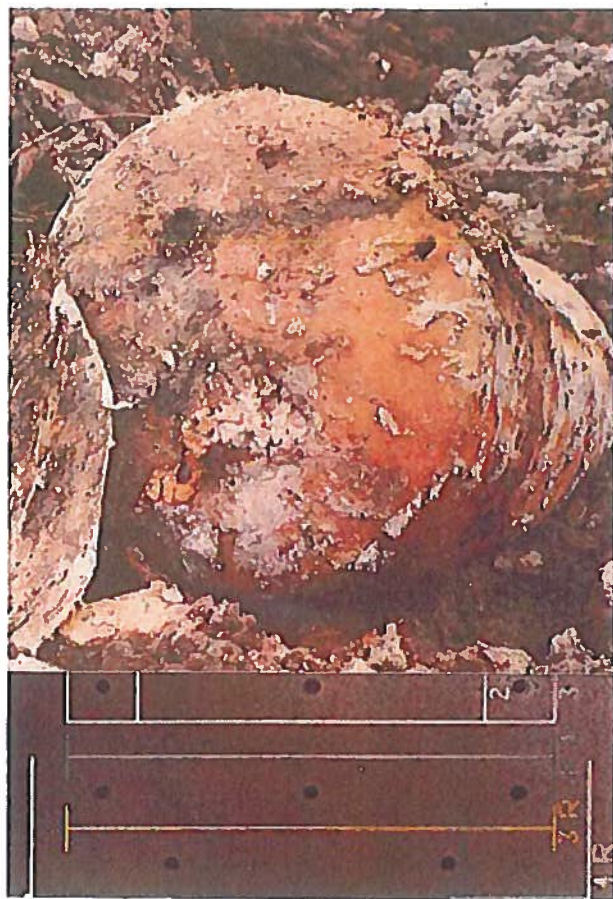
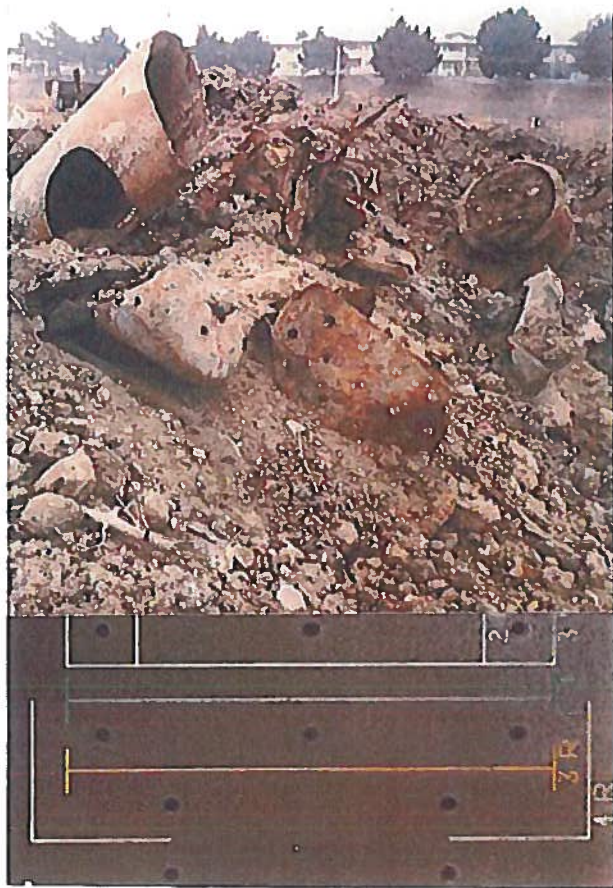
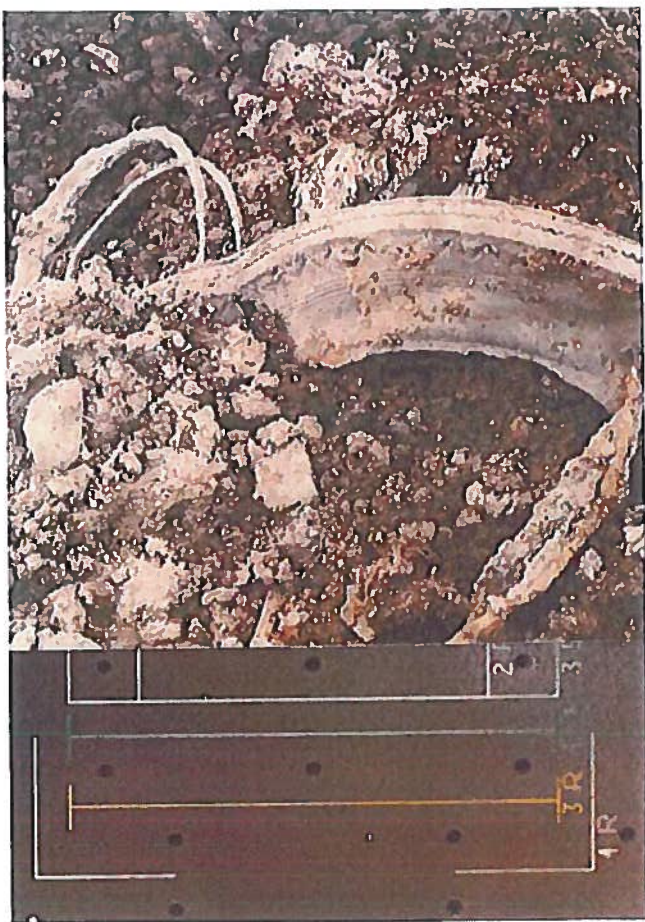


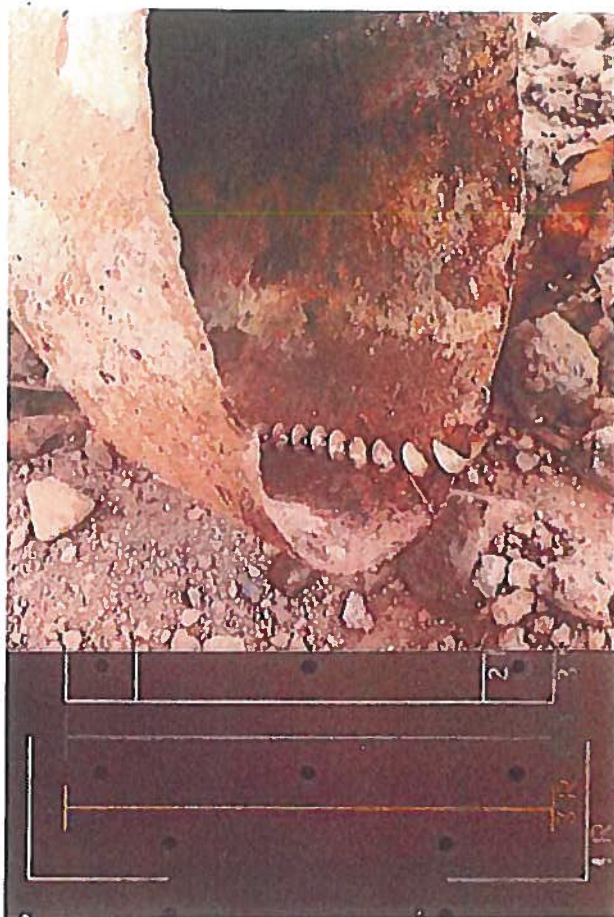
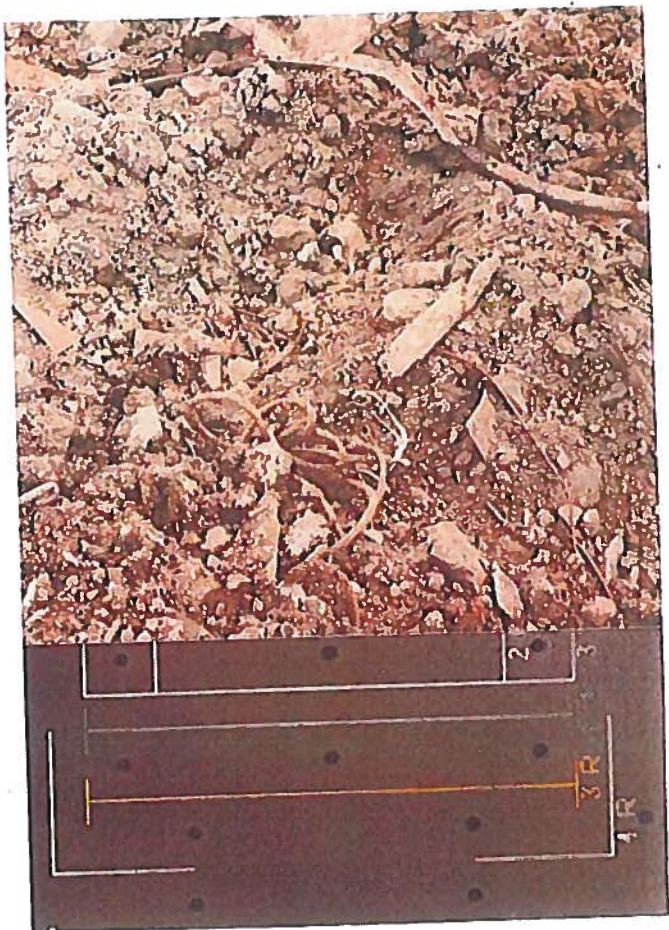
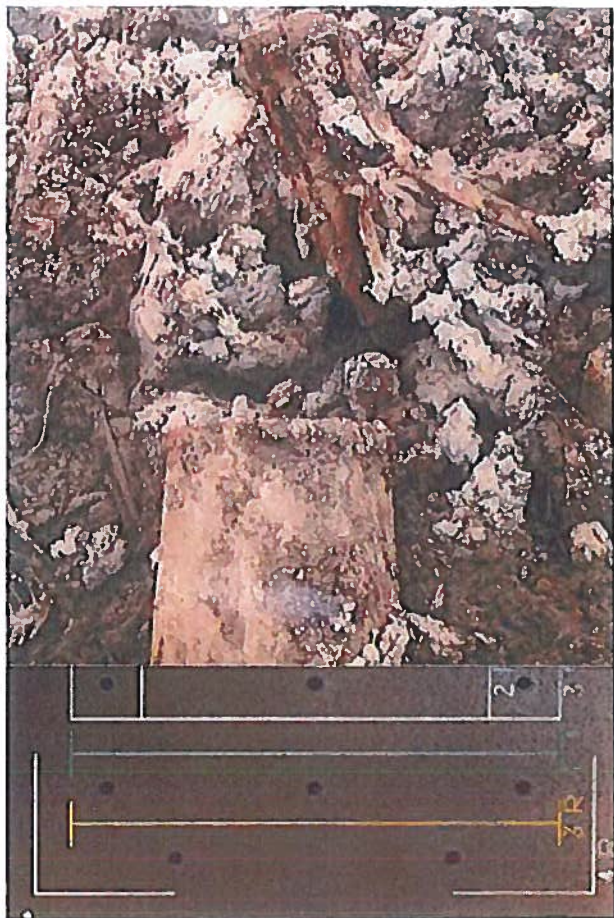
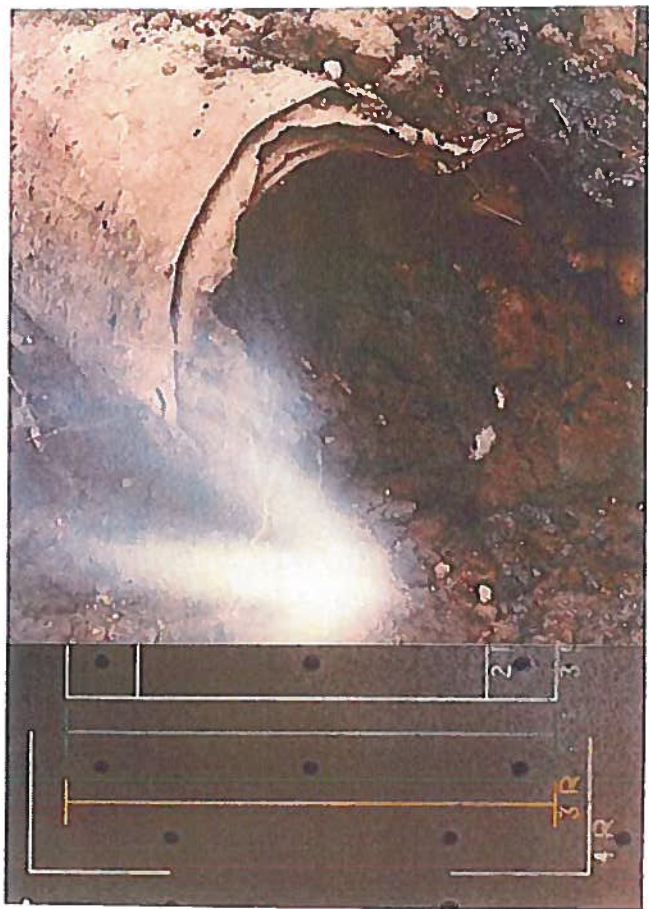


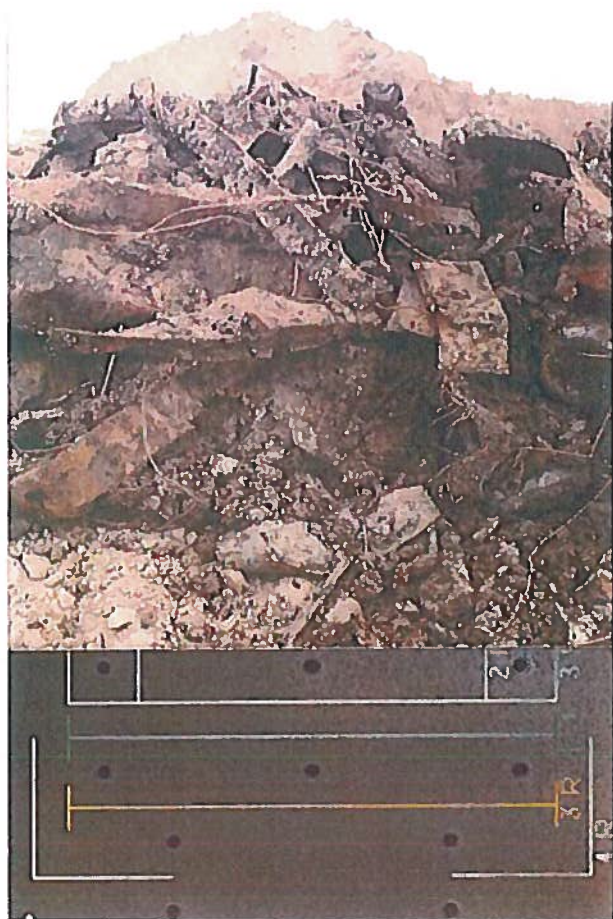
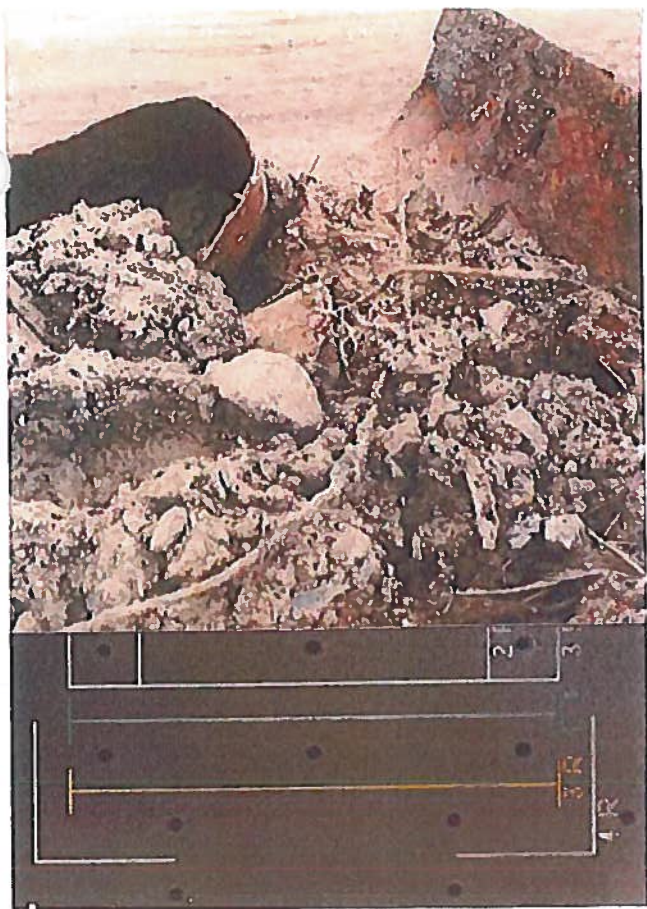


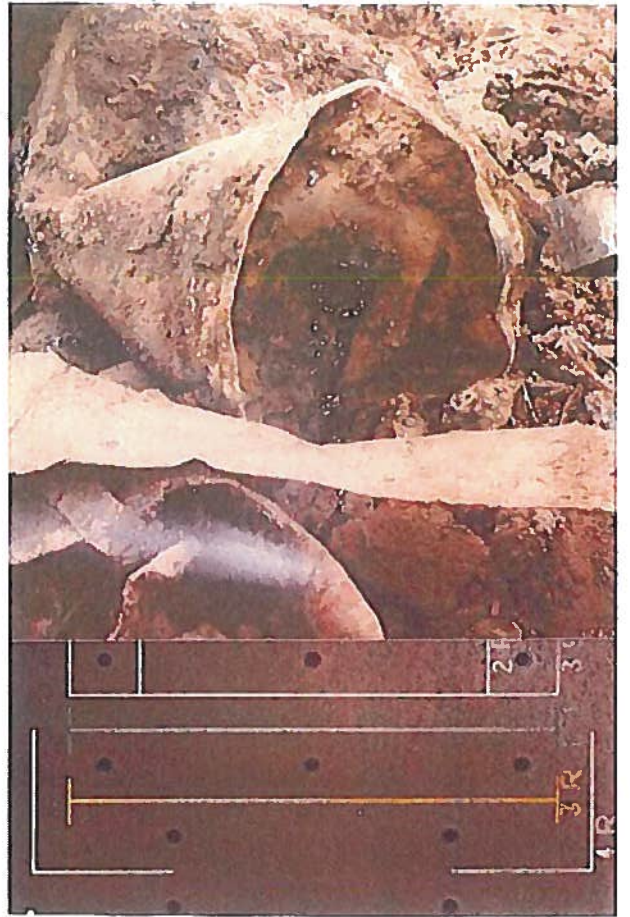
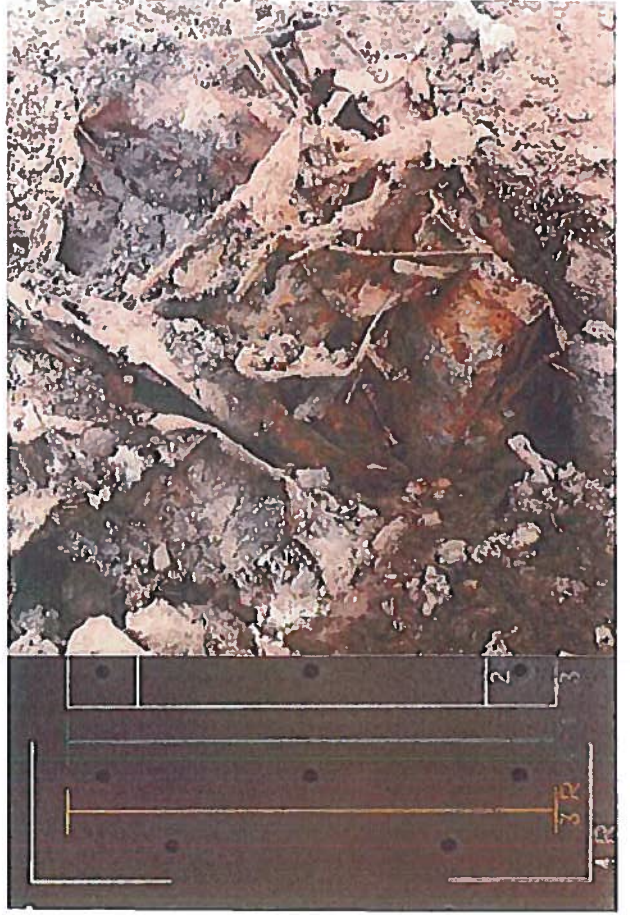






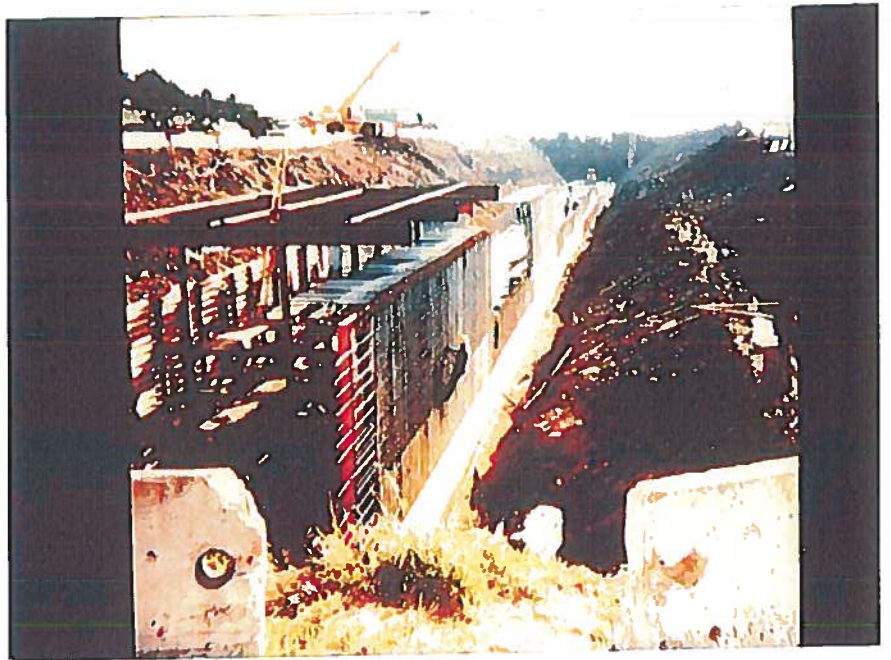


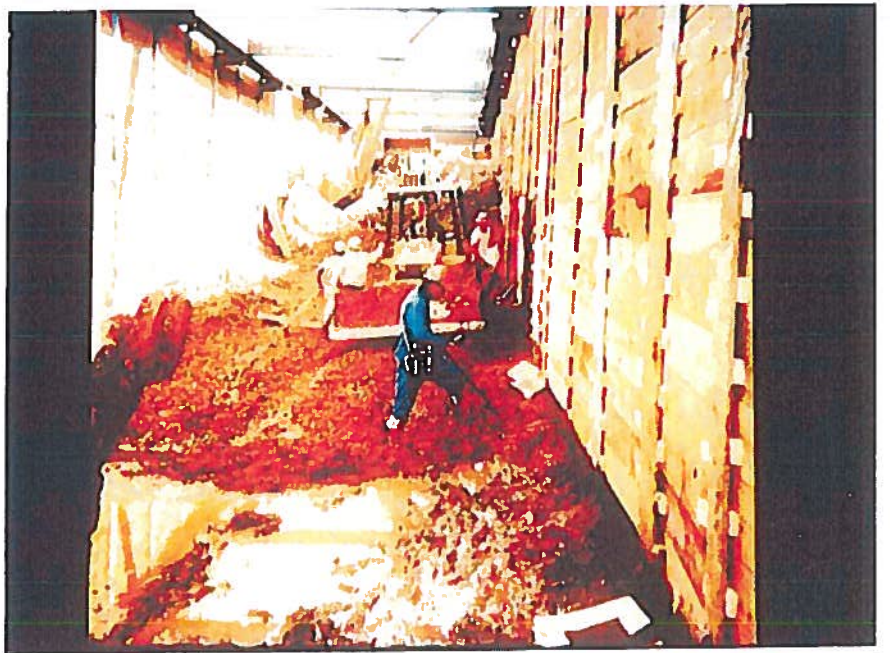


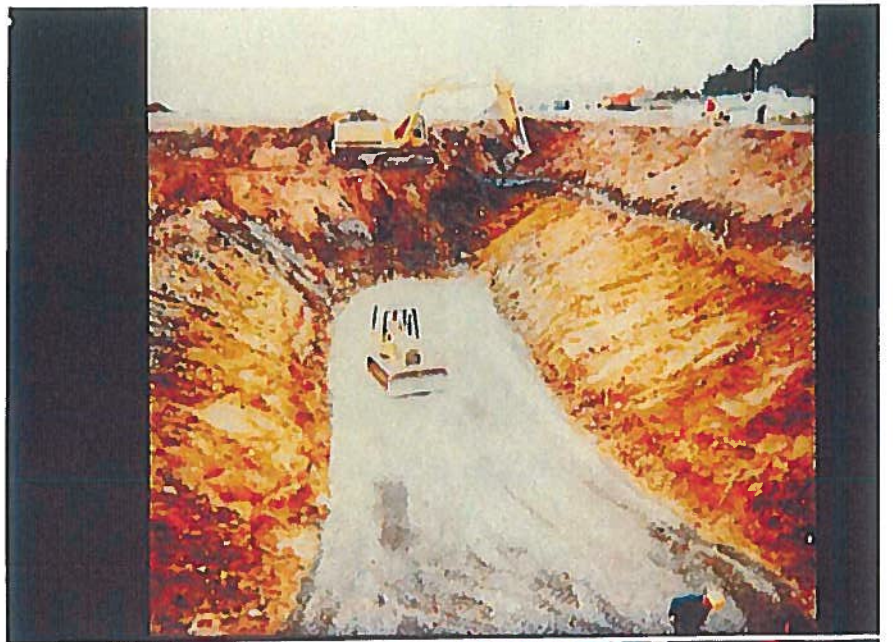


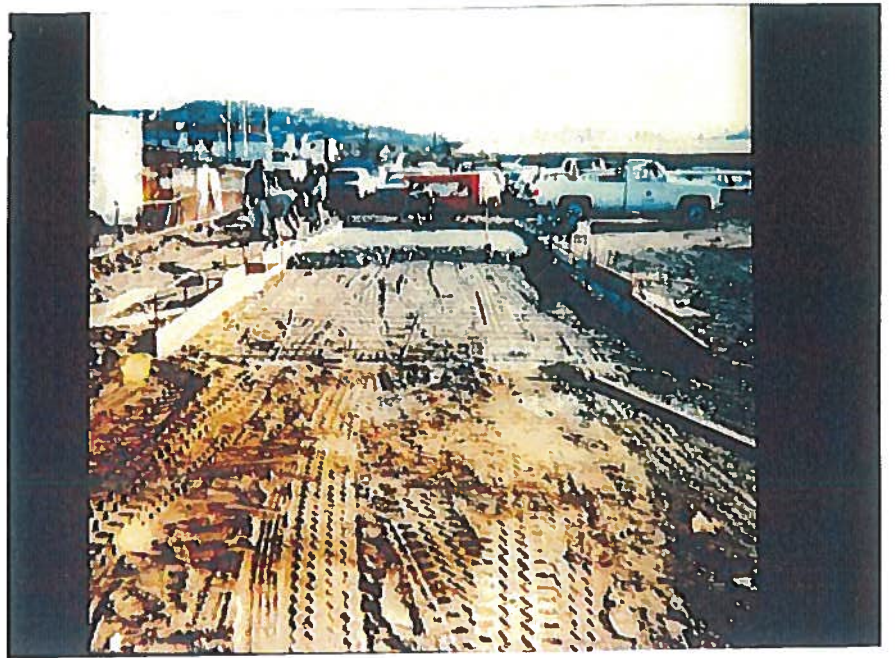


RUSTED METAL DEBRIS
EXCAVATED FROM SITE.



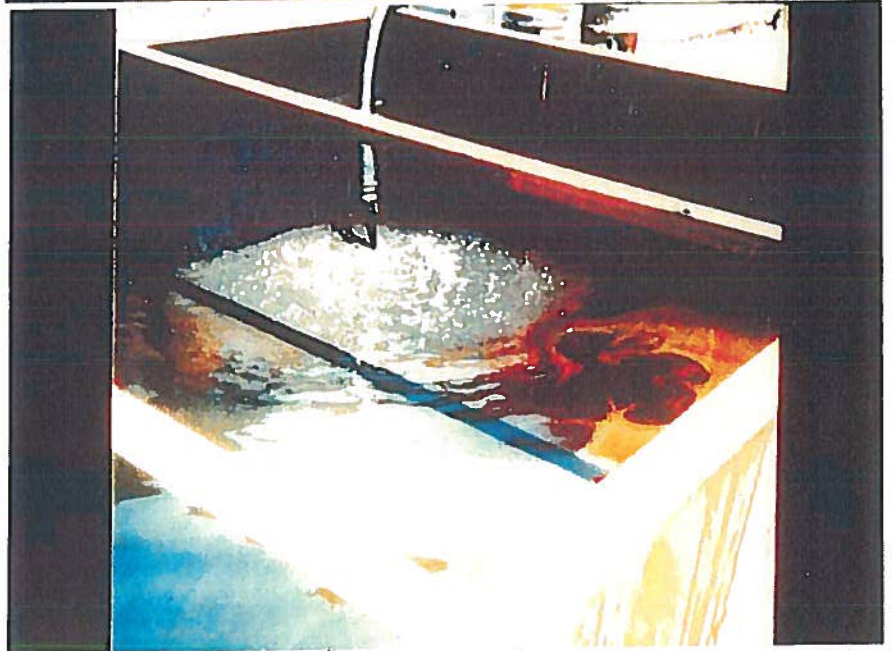


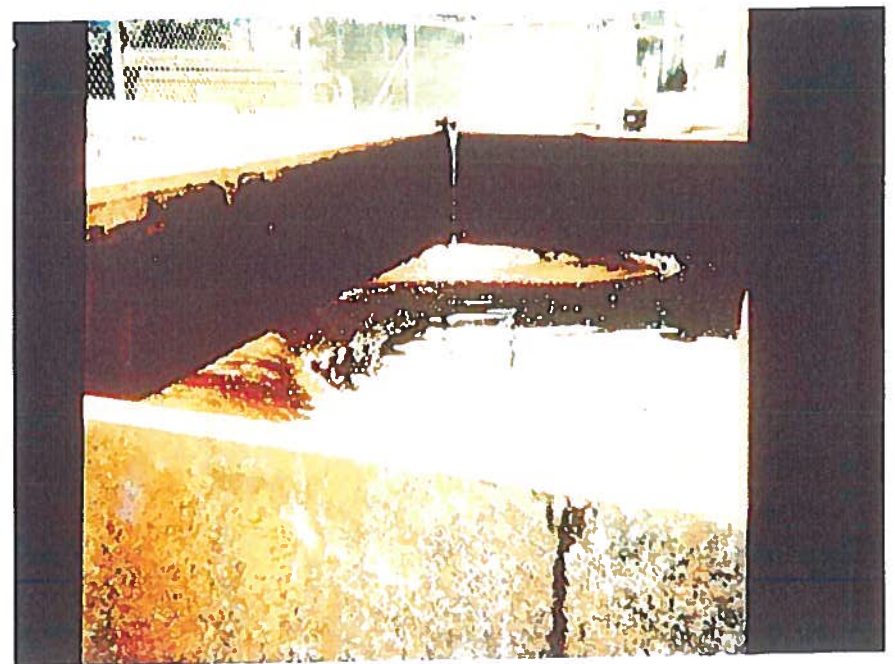
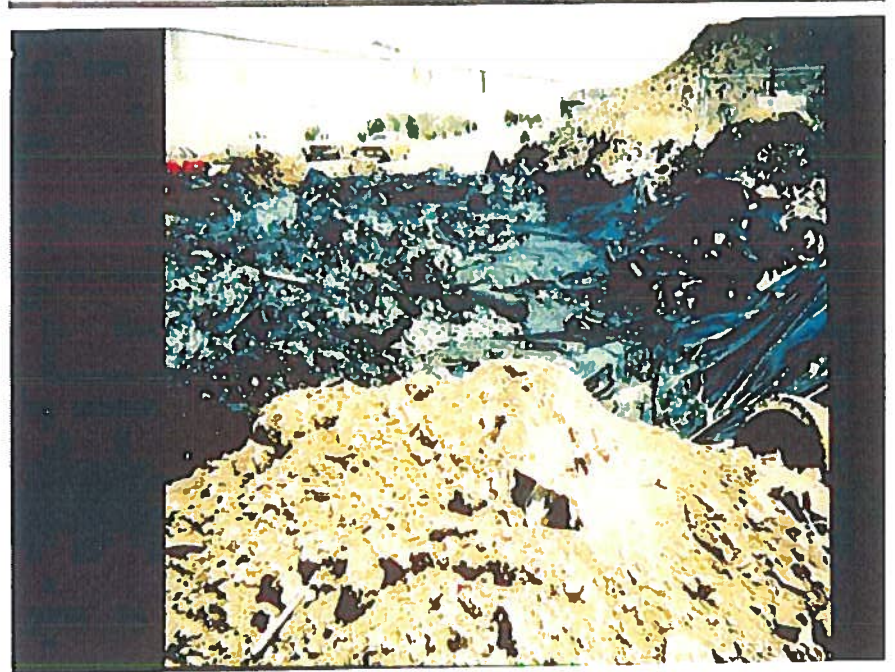


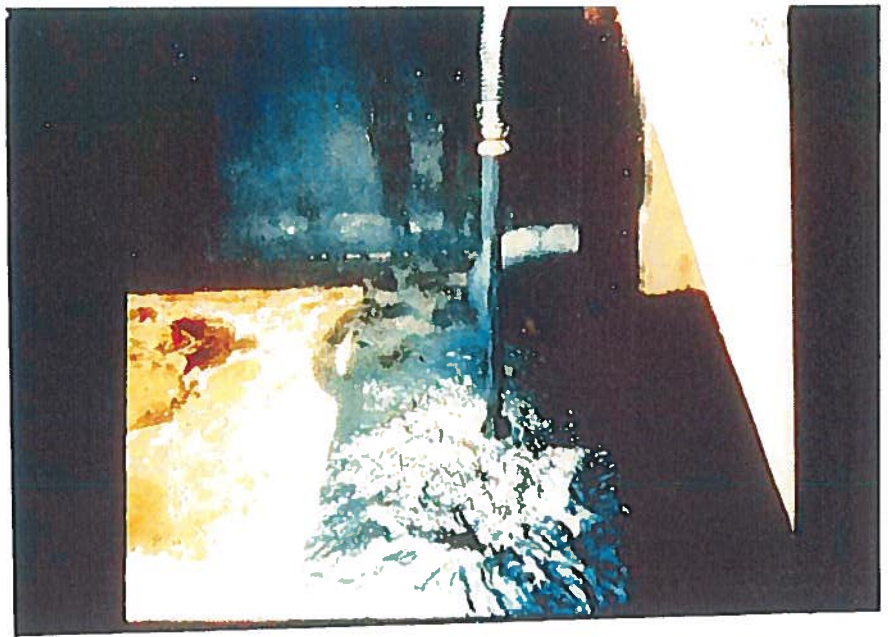


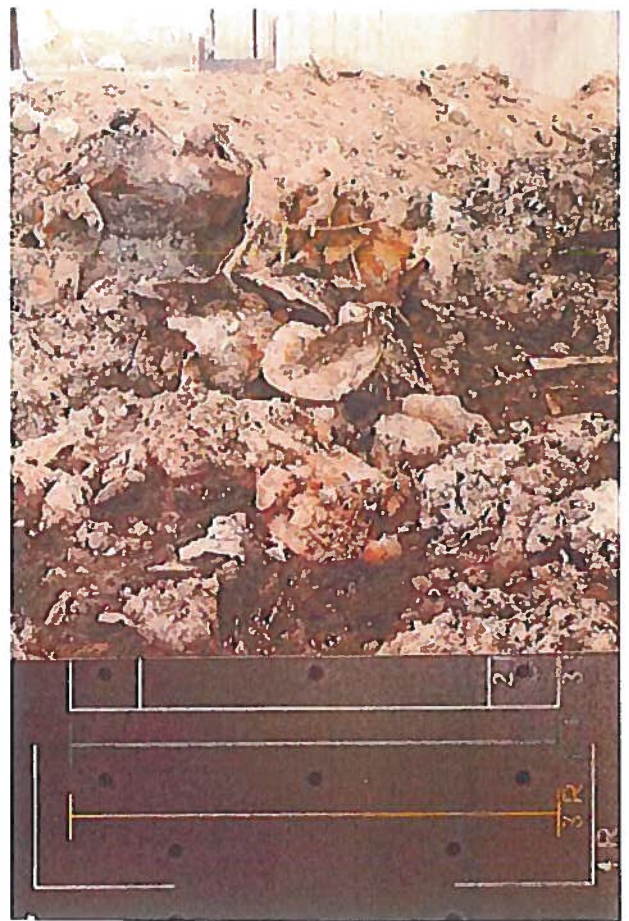
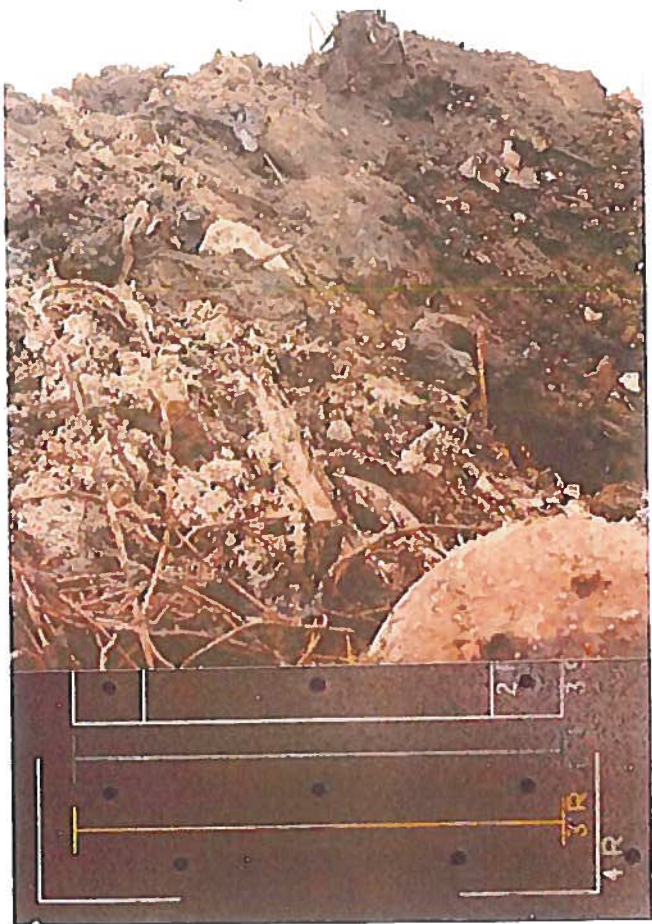
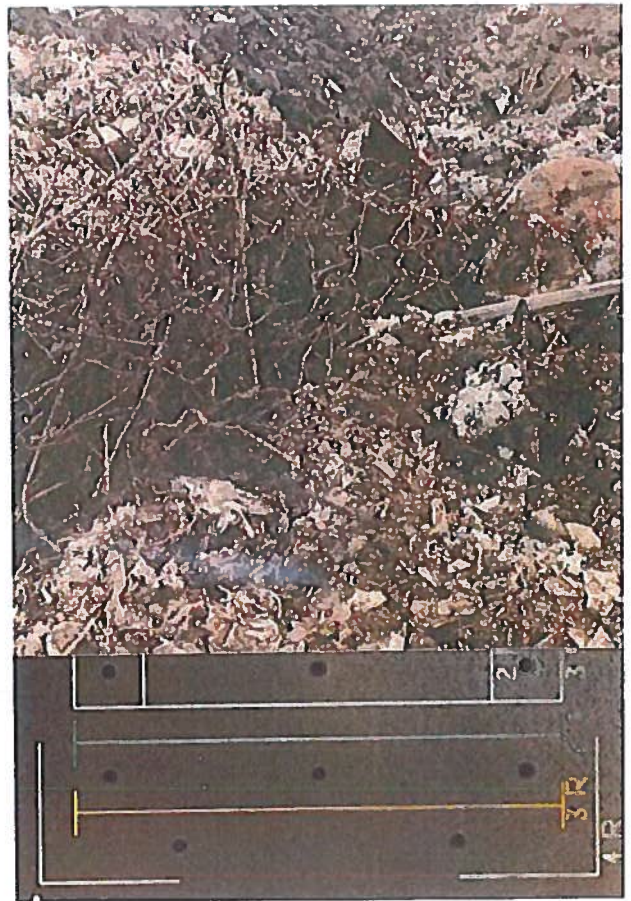
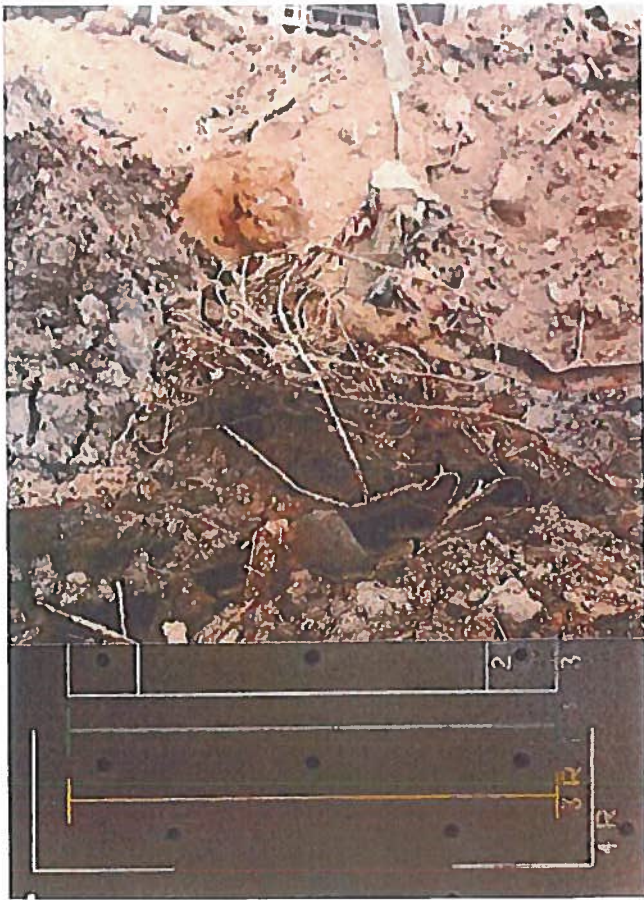
GLASS DEBRIS
EXCAVATED FROM SITE

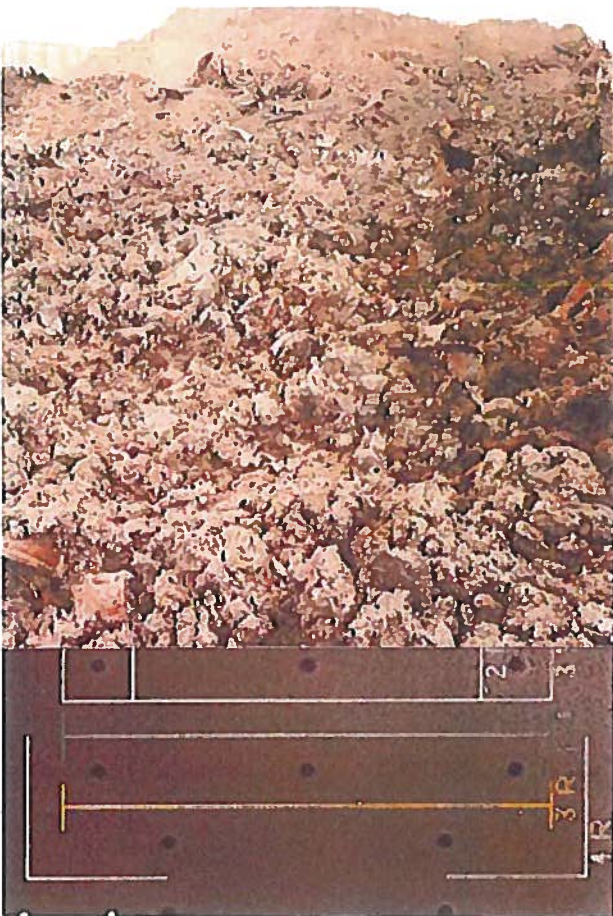
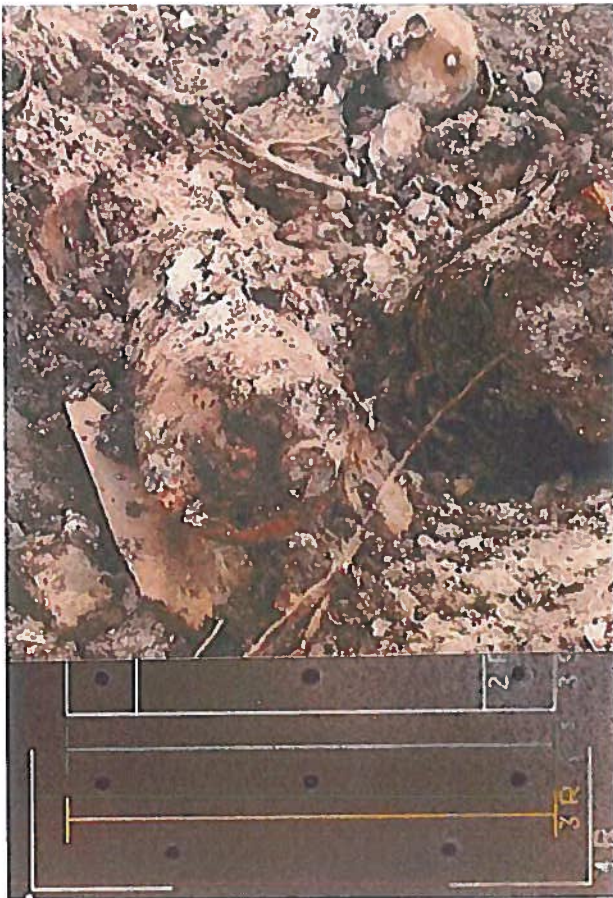












Appendix A4
RWD Files – Receipts for Crushed Rock Purchased in
the 1950s

APPENDIX A-4
PURCHASE RECORDS FOR CRUSHED ROCK
1954-1965

Block 4845 Properties (East of Hawes St.)

1954

825 Cubic Yards of Rock	Purchased from Arnold Trucking Co.
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1955

222 Cubic Yards of Rock	Purchased from Arnold Trucking
360 Cubic Yards of Rock	Purchased from Devincenzi Bros.
81 Truck Loads of Rock	Purchased from Devincenzi Bros. & Haskins
5,116 Cubic Yards of Red Rock	Purchased from Devincenzi Bros.

1956

25 Truck Loads of Rock	Purchased from Devincenzi Bros.
119 Cubic Yards of Rock	Purchased from Arnold Trucking Co.

1957

132 Cubic Yards of Red Rock	Purchased from Bill Cunningham Co.
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1958

432 Cubic Yards of Red Rock	Purchased from Lowrie Paving
20 Truck Loads of Rock	Purchased from Lindauer Co.

1959

28 Truck Loads of Red Rock	Purchased from Fay Improvement Co.
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Block 4846 Properties (West of Hawes St.)

1960

30.55 Tons of Crushed Rock	Purchased from Pacific Cement & Aggregate
15.60 Tons of Red Rock	Purchased from Pacific Cement & Aggregate
60 Cubic Yards of Sand	Purchased from Malerbi
1,560 Cubic Yards of Rock	Purchased from Arnold Trucking Co.
275 Cubic Yards of Rock	Purchased from Leonetti Bros.

1961

4,169 Cubic Yards of Rock	Purchased from and Delivered by Devincenzi Bros.
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1963

1,262 Cubic Yards of Rock	Purchased from Arnold Trucking Co.
470 Cubic Yards of Red Rock	Purchased from Marshal Mirza Trucking Co.

1965

121 Cubic Yards of Sand	Purchased from Arnold Trucking Co.
300 Cubic Yards of Red Rock	Purchased from Arnold Trucking Co.

Appendix B
USEPA General Notice Letter to RWD, April 2013 and
RWD Response to EPA for Additional Information
May 2013



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX

75 Hawthorne Street
San Francisco, CA 94105

APR 05 2001

SFUND RECORDS CTR
2276820

VIA FEDERAL EXPRESS

Stephanie Ricci
RWD Associates, LLC
145 Corte Madera Town Ctr., #62
Corte Madera, CA. 94925

Re: General Notice of Potential Liability
Yosemite Creek Superfund Site
San Francisco County, California

Dear Ms. Ricci:

The United States Environmental Protection Agency ("EPA") is spending public funds to investigate and respond to actual or threatened releases of hazardous substances, pollutants, and contaminants at the Yosemite Creek Superfund Site ("Site") which is located in San Francisco, California. Under Sections 106(a) and 107(a) of the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA"), commonly known as Superfund, Potentially Responsible Parties ("PRPs") may be required to perform cleanup actions to protect public health, welfare, or the environment. PRPs may also be responsible for all costs incurred by EPA in responding to any release or threatened release at the Site. PRPs include current and former owners and operators of facilities at which hazardous substances were disposed of, persons who arranged for the disposal of hazardous substances at a facility ("generators"), and persons who accepted hazardous substances for transport to a facility ("transporters"). The purpose of this letter is to inform you that EPA considers RWD Associates, LLC to be a PRP at the Site and to begin discussions on actions to be taken at the Site.

Site Background

The Yosemite Creek Sediment Site, also known as the Yosemite Slough Site (and included in the definition of "Site" above), is an inlet channel tidally connected to central San Francisco Bay in southeastern San Francisco, California. The Site is located in San Francisco's Bayview-Hunters Point neighborhood between the Hunters Point Naval Shipyard to the north and the Candlestick Point State Recreational Area to the south. The boundary of the Yosemite Slough site includes

contaminated mud sediments in the 1,600-foot long slough channel (see Enclosure 1). In 2009, EPA collected and analyzed 191 sediment samples from 36 locations at depths of 0 to 5 feet throughout Yosemite Slough. Primary contaminants found in slough sediments are: Polychlorinated Biphenyls (PCBs) and metals such as lead and mercury. Pursuant to CERCLA and its guiding regulations, EPA is preparing a report which identifies, analyzes, and recommends the preferred remedy for the contaminated sediments. EPA intends to issue its preliminary recommendations on Yosemite Slough and solicit public comment on those recommendations in 2013. EPA best case schedule indicates that Slough cleanup work would commence in the summer of 2015.

Based on inspection, permit and assessment records obtained from various local government agencies, RWD Associates, LLC was identified as having contributed to the contamination at the Yosemite Creek Site. The records obtained indicate that RWD Associates, LLC's facilities at 1205, 1301, 1375 and 1335-1339 Yosemite Avenue and 1296, 1320 and 1340 Armstrong Avenue, San Francisco, CA, 94124 were or are contaminated with contaminants also found in the Yosemite Slough sediments. EPA believes those contaminants have migrated from your properties to the slough through subsurface migration and/or surface runoff.

General Notice

For the reasons described above, EPA believes that RWD Associates, LLC has contributed to the hazardous substances which have come to be located at the Site. As a result, EPA considers RWD Associates, LLC to be a PRP at the Site as an owner.

EPA encourages good faith negotiations, as well as coordination among your company and the other parties who are potentially responsible for contamination at the Site. A PRP group is forming concerning this Site consisting of other PRPs who have previously received a letter from EPA notifying them of their potential liability at the Site. EPA encourages you to contact a spokesperson for the PRP group, to discuss you or your company's involvement with that group. The contact information for the PRP group spokesperson is:

Nicholas van Aelstyn
Beveridge & Diamond, P.C.
456 Montgomery Street, Suite 1800
San Francisco, CA 94104-1251
(415) 262-4008
email: NvanAelstyn@bdlaw.com

If the PRP Group agrees to perform the response activities that EPA determines are necessary at the Site, EPA will give the PRPs the opportunity to negotiate and enter into an administrative order on consent ("AOC") pursuant to Sections 104, 106, and 122 of CERCLA, 42 U.S.C. §§ 9604, 9606, and 9622, that sets forth the requirements for conducting the cleanup action. If the PRPs choose not enter into an AOC, EPA has the option of (1) ordering the PRPs to perform the work pursuant to a unilateral administrative order ("UAO") under Section 106 of CERCLA, 42 U.S.C. § 9606, or (2) conducting the response action itself and seeking to recover the costs of the response from the PRPs pursuant to Section 107 of CERCLA, 42 U.S.C. § 9407.

Financial Concerns/Ability to Pay Settlements

EPA is aware that some PRPs may be unable to perform the required work or to fully pay the amount necessary to settle with EPA. If you believe, and can document, that you are financially unable to fully contribute to EPA's costs of the cleanup, please contact Abhik Dutta at the address given below for information on making a claim of inability to pay. You will be requested to submit financial information necessary for EPA to evaluate your ability-to-pay claim. Also, please note that because EPA has a potential claim against you, if your financial status changes in any significant way, such as your filing for bankruptcy, you must include EPA as a creditor.

Administrative Record

Pursuant to Section 113(k) of CERCLA, EPA must establish an administrative record file that contains documents that form the basis of EPA's decision on the selection of a response action for a site. The administrative record file, which contains the documents related to the response action selected for this Site, will be available to the public for inspection and comment later in 2013 during the above-referenced remedy selection process for the Site. The administrative record file for the Yosemite Creek Superfund Site will be available for inspection at EPA's Superfund Record Center located at 95 Hawthorne Street, 4th floor, San Francisco, CA.

Resources and Information for Small Businesses

As you may be aware, on January 11, 2002, President Bush signed into law the Superfund Small Business Liability Relief and Brownfields Revitalization Act. This Act contains several exemptions and defenses to CERCLA liability, which we suggest that all parties evaluate. You may obtain a copy of the law via the Internet at <http://www.epa.gov/enforcement/sbrcfa.html> and review EPA guidances regarding these exemptions at <http://www.epa.gov/compliance/resources/policies/cleanup/superfund>. EPA has created a number of helpful resources for small businesses. EPA has established the National Compliance Assistance Clearinghouse as well as Compliance Assistance Centers which offer various forms of resources to small businesses. You may inquire about these resources at <http://www.epa.gov>. In addition, the EPA Small Business Ombudsman may be contacted at <http://www.epa.gov/sbo>.

Next Steps

Please provide EPA with the name, address, and telephone number of the person to whom EPA should direct future correspondence on behalf of your company. If you are already involved in discussions with State or local authorities, are engaged in voluntary clean-up action, or are

involved in a lawsuit regarding your facilities located at 1205, 1301, 1375 and 1335-1339 Yosemite Avenue and 1296, 1320 and 1340 Armstrong Avenue, San Francisco, CA, 94124, you should continue such activities as appropriate. This letter is not intended to advise you or to direct you to restrict or to discontinue any such activities; however, you are advised to report the status of those discussions or actions in your response to this letter, and to provide a copy of the response to any other parties involved in those discussions or actions.

Your response should be made in writing and submitted to EPA within thirty (30) days of receipt of this letter. Your response should be directed to:

Abhik Dutta, Civil Investigator
U.S. EPA, Region 9
75 Hawthorne Street, SFD-7-5
San Francisco, California 94105

As stated above, EPA encourages you to contact the spokesperson for the Yosemite Slough PRP group, to discuss you or your company's involvement with that PRP group.

Later in 2013, EPA will announce its recommended cleanup response action for the Yosemite Slough Site and members of the general public will be encouraged to provide comment to EPA. As stated above, if the PRP Group agrees to perform the response activities that EPA determines are necessary at the Site, EPA will give the PRPs the opportunity to negotiate and enter into an AOC.

If you have any questions regarding this letter, please contact Mr. Dutta at (415) 972-3318 or you may send him an email at dutta.abhik@epa.gov. Questions regarding the Site's cleanup status should be directed to the Remedial Project Manager, Craig Cooper, at (415) 947-4148 or cooper.craig@epa.gov. Questions regarding legal matters can be directed to Thanne Cox at (415) 972-3908 or cox.elizabeth@epa.gov. Thank you for your prompt attention to this matter.

Sincerely,

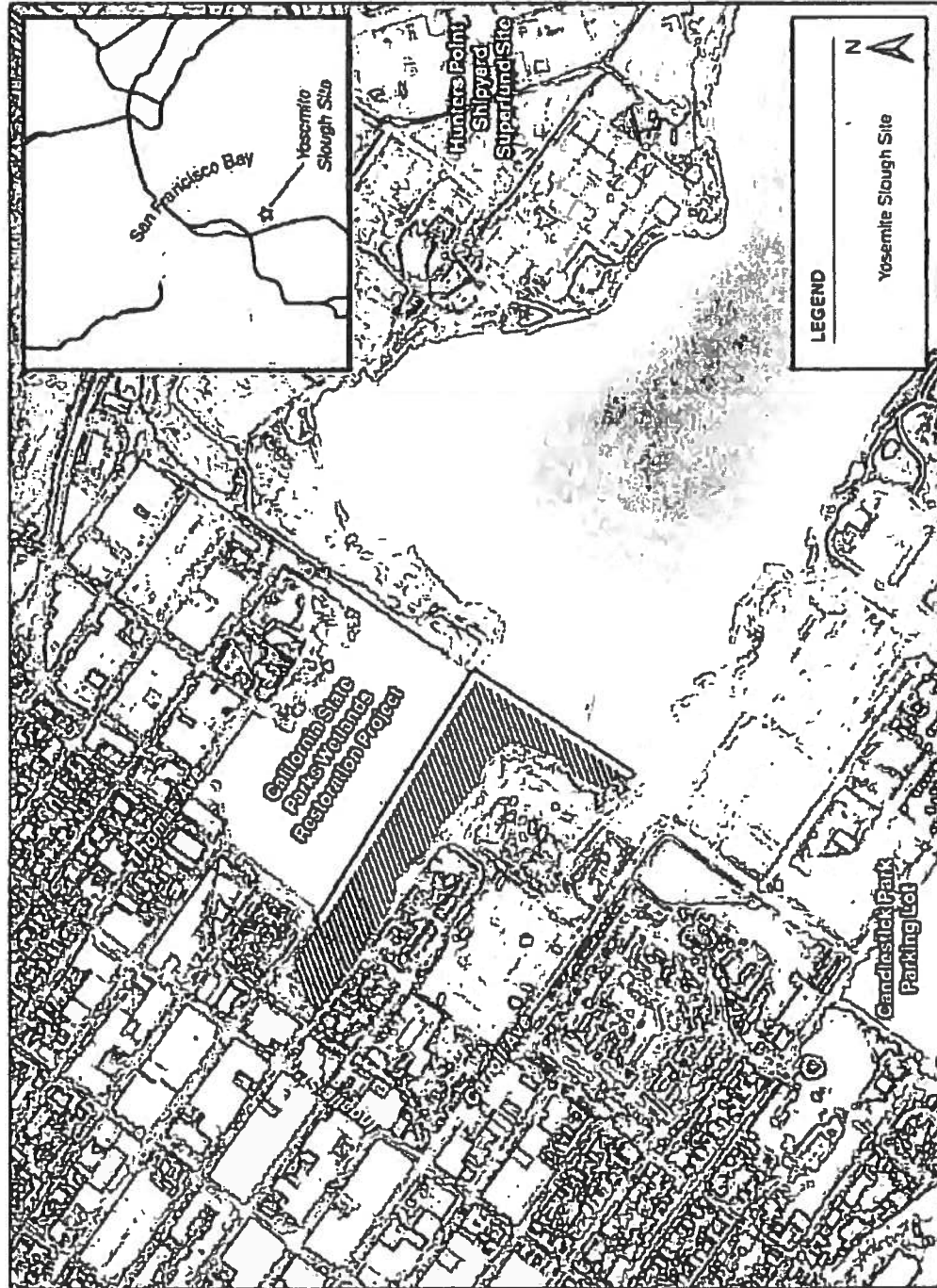


Michael Montgomery, Assistant Director
Federal Facilities & Site Cleanup Branch
Superfund Division

cc: Abhik Dutta, EPA
Thanne Cox, EPA
Craig Cooper, EPA
Nicholas W. van Aelstyn, Beveridge & Diamond, P.C.
Elaine M O'Neil, City of San Francisco
Katherine Tobias, California Department of Parks and Recreation
Jim Thomas, Defense Logistics Agency, Office of Counsel
David Batson, EPA Convening Neutral

Enclosure 1: Approximate Yosemite Slough Site Boundary Area
Enclosure 2: General Notice Recipient List

Enclosure 1: Approximate Yosemite Slough Site Boundary Area



Enclosure 2
General Notice Letter Recipient List

Liabile Company	Generator / Operator Company
Aerojet-General Corporation	Aerojet Strategic Propulsion Co.
Chevron	Amsco Union Chemicals
Ashland, Inc.	Ashland Chemical Company (a division of Ashland, Inc.)
Honeywell	Baron Blakeslee, Inc. (Allied Signal)
San Francisco Bay Area Rapid Transit District	Bay Area Rapid Transit District
Rochester Midland Corporation	Bytech Chemical
California Department of Parks and Recreation	California Department of Parks and Recreation
California State Lands Commission	California State Lands Commission
Dorsett & Jackson, Inc.	Carmona Chemical (Dorsett & Jackson)
Univar USA Inc.	Chem Central
Chevron Corporation	Chevron U.S.A., Inc.
The Coca-Cola Company	Coca-Cola USA
United States Defense Reutilization Marketing Service	Defense Property Disposal
Delta Air Lines, Inc.	Delta Air Lines, Inc.
Maxus Energy Corporation	Diamond Shamrock
The Dow Chemical Company	Dow Chemical
E.I. DuPont de Nemours & Co., Inc.	Dupont
Eureka Chemical Company	Eureka Chemical Company
Eureka Fluid Works	Eureka Fluid Works
ExxonMobil Corporation	Exxon Company, USA
Ford Motor Company	Ford Motor Company
General Motors Corporation	General Motors Corporation
Sequa Corporation	General Printing Ink (Sequa Corp.)
Gonzalez Bucket and Drum Company	Gonzalez Bucket and Drum Company
Great Western Chemical Company	Great Western Chemical Company
Haz/Control, Inc.	Haz/Control, Inc. (for South Bay Chemical, Inc.)
Hewlett-Packard Company	Hewlett Packard
Intel Corporation	Intel Corporation
International Paint, LLC	International Paint Co.
International Paper Company	International Paper Company (for Stecher-Traung-Schmidt)
Inter-State Oil Company	Interstate Oil
Kaiser Aluminum & Chemical Corp.	Kaiser Aluminum
Kelly Moore Paint Company, Inc.	Kelly Moore Paint Co. Inc
University of California	Lawrence Berkeley Lab
Northrop Grumman Corporation	Litton Industries
Lockheed Martin Corporation	Lockheed Missiles
McKesson HBOC, Incorporated	McKesson Chemical
Monsanto Company	Monsanto Company
Trimas Corporation Which Will Do Business in California as NI Industries, Inc.	Norris Industries (Riverbank Ammo plant)

Enclosure 2
General Notice Letter Recipient List

Liabe Company	Generator / Operator Company
The O'Brien Corporation	O'Brien Corp. (Fuller O'Brien Paints)
Nella Oil Company LLC	Olympian Oil Co.
Owens-Illinois, Inc.	Owen Illinois (Brockway Glass)
Pacific Gas & Electric Company	Pacific Gas & Electric Company
Peninsula Oil Company	Peninsula Oil Company
Pennzoil-Quaker State Company	Pennzoil Company
Puregro Company	Puregro Company
Pennzoil-Quaker State Company	Quaker State Oil
R.J. McLennan Company, Inc.	R.J. McGlennon Company, Inc. (MacLac)
Tyco Electronics	Raychem Corporation
Redding Petroleum, Inc.	Redding Petroleum aka Industrial Oil
Redwood Oil Company	Redwood Oil Company
Reichhold, Inc.	Reichhold Chemicals, Inc.
Alcoa	Reynolds Metals Company
Rohm & Haas Company	Rohm & Haas Company
Romic Environmental Technologies Corporation	Romic Chemical
RWD Associates, LLC	RWD Associates, LLC
Ingersoll-Rand Company	Schlage Lock
Shell Oil Company	Shell Oil
Simpson Coatings Group, Inc.	Simpson Coatings (Organic Coatings)
NL Industries, Inc.	Spencer Kellogg
Textron, Inc.	Spencer Kellogg
Stanford University	Stanford University
ITW PMI Investments, Inc.	Stero Company
Roche Palo Alto LLC	Syntex Labs
Tap Plastics, Inc.	Tap Plastics, Inc. (Chemco)
Pacific Scientific Energetic Materials Company	Teledyne
ICI Paints North America	The Glidden Co.
University of California	U.C. Regents
Chemcraft Coatings Technology, Inc.	U.S. Cellulose
Union City Chemicals Incorporated	Union City Chemicals
Chevron Corporation	Union Oil Company of California dba Unocal Corporation
United Air Lines, Inc.	United Air Lines, Inc.
United Technologies Corporation	United Technologies Corporation
University of California	Univ. of California, San Francisco
Univar USA Inc.	Van Waters & Rogers, Inc.
W.R. Grace & Company	W.R. Grace/Dewey Almy
W.R. Meadows, Inc.	W.R. Meadows, Inc.
WDC Liquidating Inc.	Waymire Drum Co.
Chemtura	Witco Corporation
Sandoz Agro, Inc.	Zoecon Corp.



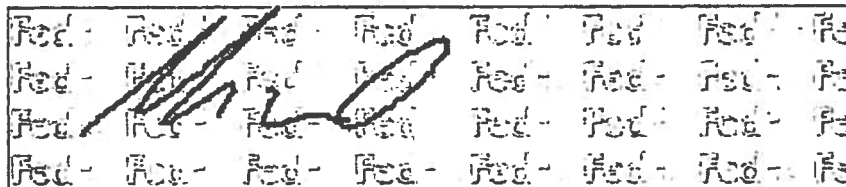
April 12, 2013

Dear Customer:

The following is the proof-of-delivery for tracking number **546221780028**.

Delivery Information:

Status:	Delivered	Delivered to:	Receptionist/Front Desk
Signed for by:	M.CORDARO	Delivery location:	145 CORTE MADERA TOWN CTR CORTE MADERA, CA 94925
Service type:	FedEx Priority Overnight	Delivery date:	Apr 8, 2013 10:15
Special Handling:	Deliver Weekday		
	Direct Signature Required		



Shipping Information:

Tracking number:	546221780028	Ship date:	Apr 5, 2013
		Weight:	0.5 lbs/0.2 kg

Recipient:
Stephanie Ricci
RWD Associates

Shipper:
Yosemite Creek
Toeroek Associates, Inc.
1300 Clay Street
Suite 450
Oakland, CA 94612 US
9025-006

Reference

Thank you for choosing FedEx.

Ref: 9025-006
Dep:

Date: 05Apr13
Wgt: 1.00 LBS

DV:

SHIPPING:	5.18
SPECIAL:	3.44
HANDLING:	0.00
TOTAL:	8.62

Svc: PRIORITY OVERNIGHT DSR
TRK: 5462 2178 0028



April 12, 2013

Dear Customer:

The following is the proof-of-delivery for tracking number **546221780061**.

Delivery Information:

Status:	Delivered	Delivered to:	Receptionist/Front Desk
Signed for by:	A.CRUZ	Delivery location:	SAN FRANCISCO, CA
Service type:	FedEx Priority Overnight	Delivery date:	Apr 10, 2013 09:14
Special Handling:	Deliver Weekday		
	Direct Signature Required		

Signature image is available. In order to view image and detailed information, the shipper or payor account number of the shipment must be provided.

Shipping Information:

Tracking number:	546221780061	Ship date:	Apr 9, 2013
		Weight:	0.5 lbs/0.2 kg

Recipient:
SAN FRANCISCO, CA US

Shipper:
Oakland, CA US

Reference

9025-006

Thank you for choosing FedEx.

CC NICO VAN AELSTYN

Ref: 9025-006
Dep:

Date: 09Apr13
Wgt: 1.00 LBS
DV:

SHIPPING:
SPECIAL:
HANDLING:
TOTAL: 0.00

5.18
3.44
0.00
8.62

Sics: PRIORITY OVERNIGHT DSR
TRCX: 5462 2178 0061



April 12, 2013

Dear Customer:

The following is the proof-of-delivery for tracking number **546221780072**.

Delivery Information:

Status:	Delivered	Delivered to:	Receptionist/Front Desk
Signed for by:	D.CARTER	Delivery location:	SAN FRANCISCO, CA
Service type:	FedEx Priority Overnight	Delivery date:	Apr 10, 2013 10:02
Special Handling:	Deliver Weekday		
	Direct Signature Required		

Signature image is available. In order to view image and detailed information, the shipper or payor account number of the shipment must be provided.

Shipping Information:

Tracking number:	546221780072	Ship date:	Apr 9, 2013
		Weight:	0.5 lbs/0.2 kg

Recipient:
SAN FRANCISCO, CA US

Shipper:
Oakland, CA US

Reference

9025-006

Thank you for choosing FedEx.

CC: ELAINE O'NEIL

Ref: 9025-006
Dep:

Date: 09Apr13
Wgt: 1.00 LBS
DV:

SHIPPING:	5.18
SPECIAL:	3.44
HANDLING:	0.00
TOTAL:	8.62

Svc: PRIORITY OVERNIGHT DSR
TRCK: 5462 2178 0072



April 12, 2013

Dear Customer:

The following is the proof-of-delivery for tracking number **546221780083**.

Delivery Information:

Status:	Delivered	Delivered to:	Shipping/Receiving
Signed for by:	F.FREEMAN	Delivery location:	SACRAMENTO, CA
Service type:	FedEx Priority Overnight	Delivery date:	Apr 10, 2013 09:21
Special Handling:	Deliver Weekday		
	Direct Signature Required		

Signature image is available. In order to view image and detailed information, the shipper or payor account number of the shipment must be provided.

Shipping Information:

Tracking number:	546221780083	Ship date:	Apr 9, 2013
		Weight:	0.5 lbs/0.2 kg

Recipient:
SACRAMENTO, CA US

Shipper:
Oakland, CA US

Reference

9025-006

Thank you for choosing FedEx.

CC: KATHRYN TOBIAS

Ref: 9025-006
Dep:

Date: 09Apr13
Wgt: 1.00 LBS
DV:

SHIPPING:	5.18
SPECIAL:	3.44
HANDLING:	0.00
TOTAL:	8.62

Svcs: PRIORITY OVERNIGHT DSA
TRCK: 5462 2178 0083



April 12, 2013

Dear Customer:

The following is the proof-of-delivery for tracking number **546221780094**.

Delivery Information:

Status:	Delivered	Delivered to:	Receptionist/Front Desk
Signed for by:	A.BUTLER	Delivery location:	HILL A F B, UT
Service type:	FedEx Priority Overnight	Delivery date:	Apr 10, 2013 09:09
Special Handling:	Deliver Weekday		
	Direct Signature Required		

Signature image is available. In order to view image and detailed information, the shipper or payor account number of the shipment must be provided.

Shipping Information:

Tracking number:	546221780094	Ship date:	Apr 9, 2013
		Weight:	0.5 lbs/0.2 kg

Recipient:
HILL A F B, UT US

Shipper:
Oakland, CA US

Reference

9025-006

Thank you for choosing FedEx.

Cc: JIM THOMAS

Ref: 9025-006
Dep:

Date: 09Apr13
Wgt: 1.00 LBS
DV:

SHIPPING:	5.18
SPECIAL:	3.44
HANDLING:	0.00
TOTAL:	8.62

Svcs: PRIORITY OVERNIGHT DSR
TRCN: 5462 2178 0094



April 12, 2013

Dear Customer:

The following is the proof-of-delivery for tracking number **546221780109**.

Delivery Information:

Status:	Delivered	Delivered to:	Residence
Signed for by:	BATSONN	Delivery location:	CHEVY CHASE, MD
Service type:	FedEx Priority Overnight	Delivery date:	Apr 11, 2013 14:22
Special Handling:	Deliver Weekday		
	Residential Delivery		
	Direct Signature Required		

Signature image is available. In order to view image and detailed information, the shipper or payor account number of the shipment must be provided.

Shipping Information:

Tracking number:	546221780109	Ship date:	Apr 9, 2013
		Weight:	0.5 lbs/0.2 kg

Recipient:
CHEVY CHASE, MD US

Shipper:
Oakland, CA US

Reference

9025-006

Thank you for choosing FedEx.

CC: DAVID BATSON

Ref: 9025-006
Dep:

Date: 09Apr13
Wgt: 1.00 LBS
DV:

SHIPPING:	5.18
SPECIAL:	3.44
HANDLING:	0.00
TOTAL:	8.62

Svc: PRIORITY OVERNIGHT DSR
TRK: 5462 2178 0109

**RWD ASSOCIATES LLC
145 Corte Madera Town Center
#626
Corte Madera, Ca. 94925
415-271-0345**

5/10/2013

TO: Ken Ehrlich

**FROM: Stephanie Ricci
RWD Associates**

Dear Ken:

**Attached the questions and answers regarding the EPA request for
information for 2009.Delivered to the San Francisco office
and signed for by D. White.**

Thanks

Stephanie Ricci

35pieces

Fax No.310-203-0567

RWD ASSOCIATES
145 Corte Madera Town Center
#626
Corte Madera, Ca. 94925
Email:stephaniericci@sbcglobal.net
415-271-0345

3/5/2009

List of Documents in response to:

Chris Reiner, SFD-9-2
Request for Information
Yosemite Creek Site
San Francisco, Ca.

RWD Associates formerly Buckeye Properties
Yosemite and Armstrong btwn Ingalls and Griffith

1. Answers to Questions
2. Christopher French Phase 1
3. Cercla Preliminary Assessment
4. Cercla Final Assessment Report
5. Notice to Agencies 9/18/1989
6. Excerpts Bay fill in SF by Dow
7. Harding Lawson Gas tank removal report
8. Mason Tillman Assoc. Site History
9. Legal Description of Properties
10. Remedial action Completion Certification
11. Gribi Assoc. workplan for tank removal certification
12. Gribi Assoc. results of groundwater investigation
13. Gribi Assoc. Phase I 6/21/07
14. Government Condemnations Yosemite Slough Area
15. Government Condemnations South Basin Area
16. Aerial Photocopy NAS Alameda 1943
17. Aerial Photo Hunters Point utility Squadron 1 3/30/45
18. Oblique Photos Moulin Studios 1940's 1950's
19. Copies of Property Deeds at time of purchase
20. Copies and Enlargements Aerial 7/28/48 Pacific Aerial Survey
21. Copy Aerial U.S. Archives 01/10/50, 10/11/43, 7/29/46

Received by

O. White - Reg. Rec.

Date

3-5-09 11:55am



March 3, 2009

Chris Reiner, SFD-9-2
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105

Subject: Request for Information Questionnaire
Ricci Property, Yosemite Creek Area

Dear Mr. Reiner:

Pursuant to your recent request, enclosed please find the completed responses to the "Enclosure B: Questions", along with several reports and documents requested in the questionnaire. These question responses were prepared by me with help from the Riccis. The provided responses are true and accurate to the best of our knowledge.

We trust that the accompanying information will be helpful with your investigation of Yosemite Creek. Please contact us if there are questions or if additional information is required.

Very truly yours,

A handwritten signature in black ink, appearing to read 'James E. Gribi', is written over a horizontal line.

James E. Gribi
Professional Geologist
California No. 5843

JEG:ct
Enclosure

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY****REGION IX**

75 Hawthorne Street
San Francisco, CA 94105

Certified Mail: 7006 0810 0003 9306 1147
Return Receipt Requested

Buckeye Properties
1296 Armstrong Ave
San Francisco, CA 94124

Re: **Request for Information
Yosemite Creek Site
San Francisco, CA**

Dear Buckeye Properties:

The United States Environmental Protection Agency ("EPA") is spending public funds to respond to actual or threatened releases of hazardous substances at the Yosemite Creek Superfund Site in San Francisco, California ("Site"). A Superfund site is a site contaminated with high levels of hazardous substances that may present a threat to human health or the environment.

The Yosemite Creek Site is located near the intersection of Yosemite Avenue and Hawes Street in San Francisco, California. The Site is a 200-foot wide tidal channel which extends from the historic mouth of the Creek approximately 1600 feet, where it opens into the South Basin. Sampling carried out at the Site has identified the presence of multiple contaminants in sediments. These contaminants include: polychlorinated biphenyls (PCBs), chlorinated pesticides (specifically DDT, Chlordane and Dieldrin) and heavy metals. EPA is now conducting an investigation to identify activities and parties that contributed to contamination in the area. EPA believes that you may have information which may assist the Agency in its investigation of the Site. The purpose of this letter is to request information you may have pertaining to this Site.

We encourage you to give this matter your immediate attention and request that you provide a complete and truthful response to this Information Request and attached questions (Enclosure B) within thirty (30) calendar days of your receipt of this letter.

Under Section 104(e) of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), 42 U.S.C. § 9604(e), as amended, EPA has broad information

gathering authority which allows EPA to require persons to furnish information or documents relating to:

- (A) The identification, nature, and quantity of materials which have been or are generated, treated, stored, or disposed of at a vessel or facility or transported to a vessel or facility.
- (B) The nature or extent of a release or threatened release of a hazardous substance or pollutant or contaminant at or from a vessel or facility.
- (C) Information relating to the ability of a person to pay for or perform a cleanup.

While EPA seeks your cooperation in this investigation, compliance with the Information Request is required by law. Please note that false, fictitious, or fraudulent statements or representations may subject you to civil or criminal penalties under federal law, and noncompliance with this request could result in EPA seeking the imposition of penalties of up to \$32,500 per day of noncompliance. The information you provide may be used by EPA in administrative, civil, or criminal proceedings.

Some of the information EPA is requesting may be considered by you to be confidential. Please be aware that you may not withhold the information upon that basis. If you wish EPA to treat the information confidentially, you must advise EPA of that fact by following the procedures outlined in Enclosure A, including the requirement for supporting your claim for confidentiality.

If you have information about other parties who may have information which may assist the Agency in its investigation of the Site or may be responsible for the contamination at the Site, that information should be submitted within the timeframe noted above.

This request for information is not subject to review by the Office of Management and Budget ("OMB") under the Paperwork Reduction Act because it is not an "information collection request" within the meaning of 44 U.S.C. §§3502(3), 3507, 3512, and 3518(c)(1). See also 5 C.F.R. §§1320.3(c), 1320.4, and 1320.6(a). Furthermore, it is exempt from OMB review under the Paperwork Reduction Act because it is directed to fewer than ten persons. 44 U.S.C. §3502(4), (11); 5 C.F.R. §§1320.4 and 1320.6(a).

Instructions on how to respond to the questions are described in Enclosure A. For any questions that require the submission of documents, electronic copies of these documents may be submitted via email if the documents are available in electronic format. However, your response letter, with your original signature, must be submitted in hardcopy. If you choose to submit attachments to your response letter via email, please be clear in both your hardcopy and electronic submittal all to identify which documents are being submitted electronically and identify which EPA questions the electronic attachments correspond to. Additionally, EPA

reserves the right to require a hard copy of the document in the future. Please return your written response to this request for information, signed by you or a duly authorized official of your company, within 30 calendar days of receipt of this letter. Please direct your response to:

Chris Reiner, SFD-9-2
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, California 94105

Your response should include the appropriate name, address, and telephone number of the person to whom EPA should direct future correspondence in regard to this matter on behalf of your company.

If you have questions regarding this information request, please contact Chris Reiner at 415-972-3414 or by email at reiner.chris@epa.gov. If you have questions about the history of the Site, the nature of the environmental conditions at the Site, or the status of cleanup activities, please contact Bret Moxley at 415-972-3114 or by email at moxley.bret@epa.gov. Please direct any legal questions to Michael Massey at 415-972-3034 or by email at massey.michael@epa.gov.

We appreciate and look forward to your prompt response to this information request.

Sincerely,

James C. Hanson, Chief
Enforcement and Removal Operations Section
Superfund Division

Enclosures (2)

ENCLOSURE A: INSTRUCTIONS AND DEFINITIONS**Instructions:**

1. **Answer Every Question Completely.** A separate response must be made to each of the questions set forth in this Information Request. For each question contained in this letter, if information responsive to this Information Request is not in your possession, custody, or control, please identify the person(s) from whom such information may be obtained.
2. **Number Each Answer.** When answering the questions in Enclosure B, please precede each answer with the corresponding number of the question and subpart to which it responds.
3. **Number Each Document.** For each document produced in response to this Information Request, indicate on the document, or in some other reasonable manner, the number of the question to which it corresponds.
4. **Provide the Best Information Available.** Provide responses to the best of Respondent's ability, even if the information sought was never put down in writing or if the written documents are no longer available. You should seek out responsive information from current and former employees/agents. Submission of cursory responses when other responsive information is available to the Respondent will be considered non-compliance with this Information Request.
5. **Identify Sources of Answer.** For each question, identify (see Definitions) all the persons and documents that you relied on in producing your answer.
6. **Continuing Obligation to Provide/Correct Information.** If additional information or documents responsive to this Request become known or available to you after you respond to this Request, EPA hereby requests pursuant to CERCLA Section 104(e) that you supplement your response to EPA.
7. **Scope of Request.** The scope of this request includes all information and documents independently developed or obtained by research on the part of your company, its attorneys, consultants or any of their agents, consultants or employees.
8. **Confidential Information.** The information requested herein must be provided even though you may contend that it includes confidential information or trade secrets. You may assert a confidentiality claim covering part or all of the information requested, pursuant to Sections 104(e)(7)(E) and (F) of CERCLA, 42 U.S.C. §§9604(e)(7)(E) and (F), and Section 3007(b) of RCRA, 42 U.S.C. §6927(b), and 40 C.F.R. §2.203(b).

If you make a claim of confidentiality for any of the information you submit to EPA, you must prove that claim. For each document or response you claim confidential, you must separately address the following points:

1. clearly identify the portions of the information alleged to be entitled to confidential treatment;
2. the period of time for which confidential treatment is desired (e.g., until a certain date, until the occurrence of a specific event, or permanently);
3. measures taken by you to guard against the undesired disclosure of the information to others;
4. the extent to which the information has been disclosed to others, and the precautions taken in connection therewith;
5. pertinent confidentiality determinations, if any, by EPA or other federal agencies, and a copy of any such determinations or reference to them, if available; and
6. whether you assert that disclosure of the information would likely result in substantial harmful effects on your business' competitive position, and if so, what those harmful effects would be, why they should be viewed as substantial, and an explanation of the causal relationship between disclosure and such harmful effects.

To make a confidentiality claim, please stamp, or type, "confidential" on all confidential responses and any related confidential documents. Confidential portions of otherwise nonconfidential documents should be clearly identified. You should indicate the date, if any, after which the information need no longer be treated as confidential. Please submit your response so that all nonconfidential information, including any redacted versions of documents are in one envelope and all materials for which you desire confidential treatment are in another envelope that is clearly marked "confidential".

All confidentiality claims are subject to EPA verification. It is important that you satisfactorily show that you have taken reasonable measures to protect the confidentiality of the information and that you intend to continue to do so, and that it is not and has not been obtainable by legitimate means without your consent. Information covered by such claim will be disclosed by EPA only to the extent permitted by CERCLA Section 104(e). If no such claim accompanies the information when it is received by EPA, then it may be made available to the public by EPA without further notice to you.

9. Disclosure to EPA's Authorized Representatives. Information which you submit in response to this Information Request may be disclosed by EPA to authorized representatives of the United States, pursuant to 40.C.F.R. 2.310(h), even if you assert that all or part of it is confidential business information. The authorized representatives of EPA to which EPA may disclose information contained in your response are as follows:

1. GRB Environmental Services, Inc.
EPA Contract Number EP-R9-06-03
2. Department of Toxic Substances Control/California
Environmental Protection Agency

3. Science Applications International Corporation
GSA Contract Number GS-10F-0076J
4. TechLaw Inc.
GSA Contract Number GS-10F-0168J

Pursuant to 40 C.F.R. §2.310(h)(2)(iii), EPA will provide notice in the Federal Register or by letter of any subsequent additions in EPA contractors who may have access to your response to this Information Request. You will have at least five working days to submit comments to any such notice.

This information may be made available to these authorized representatives of EPA for any of the following reasons: to assist with document handling, inventory, and indexing or to assist EPA with its cleanup and enforcement efforts. Pursuant to 40 C.F.R. §2.310(h), you may submit comments on EPA's disclosure of any confidential information contained in your response by EPA to its authorized representatives along with the response itself, within the thirty (30) calendar day period in which the response is due.

10. Objections to Questions. If you have objections to some or all of the questions contained in the Information Request letter, you are still required to respond to each of the questions.

Definitions:

1. The term "you" or "Respondent" should be interpreted to include the addressee of this Information Request, the addressee's officers, managers, employees, contractors, trustees, successors, assigns and agents.
2. The term "person" shall include any individual, firm, unincorporated association, partnership, corporation, trust, joint venture, or other entity.
3. The term "waste" or "wastes" shall mean and include trash, garbage, refuse, by-products, solid waste, hazardous waste, hazardous substances, and pollutants or contaminants, whether solid, liquid, or sludge.
4. The term "hazardous waste" shall have the same definition as that contained in Section 1004(5) of RCRA.
5. The term "hazardous substance" shall have the same definition as that contained in Section 101(14) of CERCLA, and includes any mixtures of such hazardous substances with any other substances, including mixtures of hazardous substances with petroleum products or other nonhazardous substances.
6. The term "release" has the same definition as that contained in Section 101(22) of CERCLA, and includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment, including the abandonment or discharging of barrels, containers and other closed receptacles containing any hazardous substance or pollutant or contaminant.

7. The term "pollutant or contaminant" shall have the same definition as that contained in Section 101(33) of CERCLA and include any mixtures of such pollutants and contaminants with any other substance including petroleum products.
8. The term "materials" shall mean all substances that have been generated, treated, stored, or disposed of or otherwise handled at or transported to the Site including, but not limited to, all hazardous substances, pollutants or contaminants.
9. The term "documents" includes any written, recorded, computer generated or visually or aurally reproduced material of any kind in any medium in your possession, custody, or control or known by you to exist, including originals, all prior drafts, and all non-identical copies.
10. The term "business activities" shall mean all actions, endeavors, ventures, or financing arrangements related in any manner whatsoever to the use and development of the Property, including surveying, sampling, grading, documentation, photography, demolition, construction, and waste disposal, and sales.
11. The term "identify" means, with respect to a natural person, to set forth: (a) the person's full name, (b) present or last known business and home addresses and telephone numbers; and (c) present or last known employer (include full name and address) with job title, position, or business.
12. The term "identify" means, with respect to a corporation, partnership, business trust, or other entity, to set forth: (a) its full name; (b) complete street address; (c) legal form (e.g., corporation, partnership, etc.); (d) the state under whose laws the entity was organized; and (e) a brief description of its business.
13. The term "identify" means, with respect to a document, to provide: (a) its customary business description (e.g., letter, invoice); (b) its date; (c) its number if any (e.g., invoice or purchase order number); (d) the identity of the author, addressee, and/or recipient; and (e) a summary of the substance or the subject matter. Alternatively, Respondent may provide a complete copy of the document.
14. The term "Investigation Area" refers to the area in the Yosemite Creek Drainage Basin, bounded to the North by a line following Palou Ave., bounded to the West by a line following Newhall St. to Venus St. to Williams Ave. to Phelps St. to Highway 101, bounded to the South by Salinas Ave. to Jamestown Ave. to Hawes St. to Gilman Ave., and bounded to the East by the South Basin of San Francisco Bay. See attached Investigation Area Map for a visual depiction of the Investigation Area.

ENCLOSURE B: QUESTIONS**Section 1.0 Respondent Information**

1. Provide the full legal, registered name and mailing address of Respondent.
RWD Associates, LLC
145 Corte Madera Town Center #62
Corte Madera, CA 94925
2. For each person answering these questions on behalf of Respondent, provide:
 - a. full name: **James E. Gribi**
 - b. title: **Principal/Senior Geologist, Gribi Associates, Inc.**
 - c. business address: **1090 Adams Street, Suite K, Benica, CA 94510**
 - d. business telephone number, electronic mail address, and FAX machine number.
Phn: 707.748.7743; email: jgribi@gribiassociates.com; Fax: 707.748.7763
3. If Respondent wishes to designate an individual for all future correspondence concerning this Site, please indicate here by providing that individual's name, address, telephone number, fax number, and, if available, electronic mail address. **No**

Section 2.0 Owner/Operator Information

4. Identify each and every Property that Respondent currently owns, leases, operates on, or otherwise is affiliated or historically has owned, leased, operated on, or otherwise been affiliated with within the Investigation Area during the period of investigation (1945 – the present).

The Property is currently owned by RWD Associates, LLC (Stephanie Ricci, Reginald Ricci's wife). In 1999, the Property ownership was transferred to RWD Associates, LLC from Buckeye Properties (a partnership consisting of Reginald Ricci, solely, and Reginald Ricci, Executor for the Estate of Anita Ricci, deceased).

The site includes the following parcel numbers, corresponding addresses, and tenants:

Parcel Number	Listed Parcel Address	Field Address	Tenants/Uses/Notes
---------------	-----------------------	---------------	--------------------

SOUTHEAST OF HAWES STREET			
4845-001	1205 Yosemite Ave.	1204 Armstrong Ave.	Ciracosta Iron & Metal, storage of empty debris boxes No access from Yosemite Avenue
4845-002	1296 Armstrong Ave.	1296 Armstrong Ave.	Ranger pipeline (LEASE FROM CITY)
4845-003	1296 Armstrong Ave.	1295 Yosemite Ave. 1200 Armstrong Ave. 1296 Armstrong Ave.	Higgins Construction: truck maint. & storage Alpine Construction: yard, welding Ace Roofing: warehouse & retail store Ranger Pipeline: warehouse, yard, equipment maintenance
NORTHWEST OF HAWES STREET			
4846-001	1301 Yosemite Ave. 1300 Armstrong Ave.	1301 Yosemite Ave. 1300 Armstrong Ave.	Fog Town Storage: multi-tenant storage yard Vacant yard
4846-002	1320 Armstrong Ave.	1301 Yosemite Ave.	Fog Town Storage: multi-tenant storage yard
4846-003	1340 Armstrong Ave.	1320 Armstrong Ave.	Eurotech Construction: construction equipment storage
4846-013	1335 Yosemite Ave.	1335 Yosemite Ave.	Scene 2: Movie scene construction Mulleen Transport: Contractor equip. storage
4846-016	1375 Yosemite Ave.	1339 Yosemite Ave. 1320 Armstrong Ave.	Handy Dan, Inc.: storage warehouse & yard Bay Area Metals: equipment & metals storage

1. Listed Parcel Address = Address included with parcel number in City records.
2. Field Address = Address as determined in the field and as supplied by the Client.

5. Provide a brief summary of Respondent's relationship to each Property listed in response to Question 4 above, including the address, assessors' parcel number(s), dates of acquisition, period of ownership, lease, operation, or affiliation, and a brief overview of Respondent's activities at the Properties identified.

The site includes the following parcel numbers, corresponding addresses, and tenants:

Parcel Number	Listed Parcel Address	Date of Acquisition	Tenants/Uses/Notes
SOUTHEAST OF HAWES STREET			
4845-001	1204 Yosemite Ave.	1999	Ciracosta Iron & Metal, equipment yard No access from Yosemite Avenue
4845-002	1296 Armstrong Ave.	LEASE FROM CITY	Ranger Pipeline: warehouse, yard, equipment maintenance
4845-003	1295 Yosemite Ave. 1200 Armstrong Ave. 1296 Armstrong Ave.	1999	Higgins Construction: truck maint. & storage Alpine Construction: yard, welding Ace Roofing: warehouse & retail store Ranger Pipeline: warehouse, yard, equipment maintenance

Parcel Number	Listed Parcel Address	Date of Acquisition	Tenants/Uses/Notes
NORTHWEST OF HAWES STREET			
4846-001	1301 Yosemite Ave. 1300 Armstrong Ave.	1999	Fog Town Storage: multi-tenant storage yard Vacant yard
4846-002	1301 Armstrong Ave.	1999	Fog Town Storage: multi-tenant storage yard
4846-003	1320 Armstrong Ave.	1999	Eurotech Construction: construction equipment storage
4845-013	1335 Yosemite Ave.	1999	Scene 2: Movie scene construction Multeen Transport: Contractor equip. storage
4846-016	1339 Yosemite Ave. 1320 Armstrong Ave.	1999	Handy Dan, Inc.: storage warehouse & yard Bay Area Metals: equipment & metals storage

1. Listed Parcel Address = Address included with parcel number in City records.
 2. Field Address = Address as determined in the field and as supplied by the Client.
6. Identify any persons who concurrently with you exercises or exercised actual control or who held significant authority to control activities at each Property, including:
- a. partners or joint venturers; None
 - b. any contractor, subcontractor, or licensor that exercised control over any materials handling, storage, or disposal activity on the Property; (service contractors, remediation contractors, management and operator contractors, licensor providing technical support to licensed activities); None
 - c. any person subleasing land, equipment or space on the Property;

Parcel Number	Listed Parcel Address	Tenant	Contact Info
SOUTHEAST OF HAWES STREET			
4845-001	1204 Yosemite Ave.	Circosta Iron & Metal	Steve Circosta, 415-240-8568
4845-002	1296 Armstrong Ave.	LEASE FROM CITY Sublease to: Ranger Pipeline	Tom Hunt, 415-822-3700
4845-003	1295 Yosemite Ave. 1200 Armstrong Ave. 1296 Armstrong Ave.	Higgins Construction Alpine Construction Ace Roofing Ranger Pipeline	Jerry Higgins, 415-740-2156 Daniel Jordan, 415-242-5198 Moon Park, 415-822-1212 Tom Hunt, 415-822-3700
NORTHWEST OF HAWES STREET			
4846-001	1301 Yosemite Ave. 1300 Armstrong Ave.	Fog Town Storage	Nino Andrini, 415-240-1864
4846-002	1301 Armstrong Ave.	Fog Town Storage	Nino Andrini, 415-240-1864
4846-003	1320 Armstrong Ave.	Eurotech Construction	John Feely, 415-564-5809

Parcel Number	Listed Parcel Address	Tenant	Contact Info
4846-013	1335 Yosemite Ave.	Scene 2	Marcus Guillard, 415-822-2020
4846-016	1339 Yosemite Ave. 1320 Armstrong Ave.	Handy Dan, Inc.	Daniel Hernandez, 415-374-6745

1. Listed Parcel Address = Address included with parcel number in City records.
 - d. utilities, pipelines, railroads and any other person with activities and/or easements regarding the Property; **None**
 - e. major financiers and lenders; **Presidio Bank**
 - f. any person who exercised actual control over any activities or operations on the Property; **None**
 - g. any person who held significant authority to control any activities or operations on the Property; **None**
 - h. any person who had a significant presence or who conducted significant activities at the Property; and **None**
 - i. any government entities that had proprietary (as opposed to regulatory) interest or involvement with regard to the activity on the Property. **None**

7. At the time you acquired or operated the Property, did you know or have reason to know that any hazardous substance, waste, or material was disposed of on, or at the Property? Describe all investigations of the Property you undertook prior to acquiring the Property and all of the facts on which you base the answer to this question.

Yes, RWD Associates, LLC was aware in 1999 of past investigation results (see below). Note that this property has been in the Ricci family since its development in the 1950s. Mr. and Mrs. Julio Ricci, the original Ricci owners, were not aware of any hazardous substance, waste, or materials disposal on the Property..

RWD Associates, LLC was aware of previous investigations and studies that had identified previous, non-Ricci activities and hazardous waste detections on the Property. Previous reports that we had knowledge of are included in Attachment A and are listed as follows

Dow, 1973; *Bay Fill in San Francisco, a History of Change*, (Masters Thesis, SF Public Library), July.

Harding Lawson Associates, 1986; *Observations and Testing, Underground Storage Tank Removal, Yosemite Avenue and Ingalls Street, San Francisco, California*, June 11.

Mason Tillman Associates, 1986; *Site History Report, Ricci and Kruse Lumber Company, San Francisco, California*, June.

Christopher M. French, R.G., 1990; *Phase I Report for Property Located in San Francisco, California*, March 26.

Ecology and Environment, Inc., 1990; *CERCLA Preliminary Assessment, Buckeye Properties, 1296 Armstrong Avenue, San Francisco, CA 94124, San Francisco County (Site EPA ID Number CAD982392243)*, December 7.

Ecology and Environment, Inc., 1993; *CERCLA Site Inspection, Buckeye Properties, 1296 Armstrong Avenue, San Francisco, CA 94124, (Site EPA ID Number CAD982392243)*, June 14.

These reports indicate that contamination was encountered beneath Armstrong Avenue in 1986 during the planning and installation of the Yosemite-Fitch Outfall Consolidation (YFOC) project by the City of San Francisco Department of Public Works (SFDPW). The SFDPW subsequently contracted various investigations to assess soil and groundwater impacts. These investigations identified primarily heavy-range hydrocarbon soil and groundwater impacts near the intersection of Armstrong Avenue and Hawes Street. A groundwater sample collected from a boring located in the impacted area showed 800 micrograms per liter (ug/l) of benzene. Some of this impacted soil and groundwater was removed for offsite disposal during the construction project. The area of these impacts was part of San Francisco Bay prior to the mid-1940s, and was subsequently in-filled, first with post-World War II military debris (primarily hospital and ship debris), and then with fill soils from surrounding topographic high areas.

On June 14, 1992, a CERCLA Site Inspection report was issued for the Property by Ecology and Environmental, Inc. on behalf of the USEPA Region 9. The site inspection did not include any sampling, but rather summarized and evaluated previous investigative results and potential human health and environmental risks. Previous investigative results showed variable concentrations of hydrocarbons and metals in soils and groundwater along both sides of South Basin Inlet. This report includes a decision stating that the site "does not qualify for future remedial site assessment under CERCLA" (page 8-1). The basis for this decision was that: (1) Hydrocarbons and metals contamination is widespread in bay fill materials and sediments, and contaminants beneath the site have not been associated with known onsite activities; (2) Groundwater use is limited in the site vicinity; and (3) While sediments in South Basin Inlet are contaminated with hydrocarbons and metals, this contamination cannot be attributed to the Property, since there are numerous potential offsite sources.

8. Identify all prior owners that you are aware of for each Property identified in Response to Question 4 above. For each prior owner, further identify if known, and provide copies of any documents you may have regarding:
- the dates of ownership;
 - all evidence showing that they controlled access to the Property; and

- c. all evidence that a hazardous substance, pollutant, or contaminant, was released or threatened to be released at the Property during the period that they owned the Property.

The following table summarizes property ownership that are aware of.

Parcel Number	Listed Parcel Address	Date/Owner	Date/Owner	Date/Owner	Date/Owner
SOUTHEAST OF HAWES STREET					
4845-001	1204 Yosemite.	1942/US Navy (condemnation)	1954/Julio & Anita Ricci	1987/Buckeye Properties	1999/RWD Associates, LLC
4845-002	1296 Armstrong	OWNED BY CITY, LEASED BY RICCI/BUCKEYE/RWD ASSOCIATES FROM 1954-PRES			
4845-003	1295 Yosemite . 1200 Armstrong 1296 Armstrong	1942/US Navy (condemnation)	1954/Julio & Anita Ricci	1987/Buckeye Properties	1999/RWD Associates, LLC
NORTHWEST OF HAWES STREET					
4846-001	1301 Yosemite . 1300 Armstrong	1942/US Navy (condemnation)	1963/Julio & Anita Ricci	1987/Buckeye Properties	1999/RWD Associates, LLC
4846-002	1301 Armstrong	1942/US Navy (condemnation)	1963/Julio & Anita Ricci	1987/Buckeye Properties	1999/RWD Associates, LLC
4846-003	1320 Armstrong	1942/US Navy (condemnation)	1963/Julio & Anita Ricci	1987/Buckeye Properties	1999/RWD Associates, LLC
4846-013	1335 Yosemite	1942/US Navy (condemnation)	1963/Julio & Anita Ricci	1987/Buckeye Properties	1999/RWD Associates, LLC
4846-016	1339 Yosemite 1320 Armstrong	1942/US Navy (condemnation)	1963/Julio & Anita Ricci	1987/Buckeye Properties	1999/RWD Associates, LLC
4846-017 ^A	1339 Yosemite 1320 Armstrong	1942/US Navy (condemnation)	1961/Julio & Anita Ricci	1987/Buckeye Properties	1999/RWD Associates, LLC

Listed Parcel Address = Address included with parcel number in City records.

^A ~ Small sliver of land adjacent to railroad measuring approx. 10 ft X 200 ft (0.052 acres)

9. Identify all prior operators of the Property, including lessors, you are aware of for each Property identified in response to Question 4 above. For each such operator, further identify if known, and provide copies of any documents you may have regarding:
- the dates of operation;
 - the nature of prior operations at the Property;
 - all evidence that they controlled access to the Property; and
 - all evidence that a hazardous substance, pollutant, or contaminant was released or threatened to be released at or from the Property during the period that they were operating the Property.

Tenant History		
Parcel Number	Address	Tenant History
4845-001	1204 Armstrong Ave.	Ciracosta Iron & Metal: 2006-pres; Core Communication: 2005-2006; Vacant; Taro Communications: 2000-2001; Esquivel Paving: ?; Trucking Company: ?
4845-002	1296 Armstrong	Ranger Pipeline: 1988-pres. CITY-OWNED PROPERTY
4845-003	1295 Yosemite Ave.	Higgins Construction: 1989-pres.
	1200 Yosemite Ave.	Alpine Construction-at least 10 years.
	1296 Armstrong Ave.	Ace Roofing: 2005-pres; Tesseract Design Group: 2005; SF Truck Repair: 2003-2005; Costello Tree Service: 2000-2002; Darcy & Harty Construction: 1989-1999; Golden Bo Co. & Choyson & Shing Kee Trucking: 1988-1998; Shin Roofing Supply: 1989-1991; S&C Roofing Supply: 1989-1994; Norman Berg Trucking (yard only): 1989; - City & County of San Francisco Temporary Construction easement while constructing sewer project: 1987-1988.
	1296 Armstrong Ave.	Ranger Pipeline, warehouse: 1988-pres.
4846-001/ 4846-002	1301 Yosemite Ave./ 1300 Armstrong Ave	Fog City Storage: 2007-2009; Bay Storage: 2006-2008; Bay Area Metals: 2005-2007; Pacific Diamond Charters: 2001-2006; L&H Engineering: 1999-2004; Yosemite Rock & Limber: 1997-1999; L&K Debris Box Service: 1990;
4846-003	1320 Armstrong Ave.	Eurotech Construction: 2009; Celtic Scaffolding: 2007-2008; Kwon Wo Ironworks: 2004-2006; Ace Tour & Charters: 2005.
4846-013	1335 Yosemite Ave.	Scene 2: 1992-pres; James Pope Cabinet Maker: 1990-1991; Architectural Wood Products: 1963-1990.
	1335 Yosemite Ave.	Multeen Transport: 2005-pres; City Debris: 1990-2005.
4846-015	1339 Yosemite Ave.	Handy Dan, Inc: 2007-pres; Bay City Repairs: 2002-2008; -2 months; Bay Area Repair

Section 3.0 Description of Each Property

10. Provide the following information about each Property identified in response to Question 4:

- a. property boundaries, including a written legal description;
- b. surface structures (e.g., buildings, tanks, pipelines, etc.);

The current Property building structures, improvements, and utilities are listed below.

Property Structures and Improvements				
Parcel Number	Address	Tenant Name	Structures/Improvements	Utilities
4845-001	1204 Armstrong Ave.	Ciracosta Iron & Metal	None	None
4845-003	1295 Yosemite Ave.	Higgins Construction	Maintenance shop & offices	City: water, sewer/storm, streets (unpaved, no sidewalks) Garbage: Golden Gate Disposal (Norcal Waste Systems)
	1200 Yosemite Ave.	Alpine Construction	Part of large warehouse bldg.	City: water, sewer/storm, streets (unpaved, no sidewalks) Garbage: Golden Gate Disposal (Norcal Waste Systems)
	1296 Armstrong Ave.	Ace Roofing Ranger Pipeline	Retail building & part of large warehouse building Part of large warehouse building.	City: water, sewer/storm, streets (unpaved, no sidewalks) Garbage: Golden Gate Disposal (Norcal Waste Systems)
4846-001	1301 Yosemite Ave.	Fog Town Storage	Metal storage containers, trailers, vehicles	City: water, sewer/storm, streets (unpaved, no sidewalks) Garbage: Golden Gate Disposal (Norcal Waste Systems)
	1300 Armstrong Ave.	Vacant yard	Vacant yard	None
4846-002	1301 Yosemite Ave.	Fog City Storage	Metal storage containers, trailers, vehicles	City: water, sewer/storm, streets (unpaved, no sidewalks) Garbage: Golden Gate Disposal (Norcal Waste Systems)
4846-003	1320 Armstrong Ave.	Shaw Pipeline	Metal storage containers	City: water, sewer/storm, streets (unpaved, no sidewalks) Garbage: Golden Gate Disposal (Norcal Waste Systems)
4846-013	1335 Yosemite Ave.	Scene 2	Metal warehouse building Metal storage containers	City: water, sewer/storm, streets (unpaved, no sidewalks) Garbage: Golden Gate Disposal (Norcal Waste Systems)
4846-016	1339 Yosemite Ave.	Handy Dan, Inc.	Metal warehouse building	City: water, sewer/storm, streets (unpaved, no sidewalks) Garbage: Golden Gate Disposal (Norcal Waste Systems)
	1320 Armstrong Ave.	Bay Area Metals	Metal storage container	None

- c. storm water drainage system, and sanitary sewer system, past and present, including septic tank(s) and where, when and how such systems are emptied and maintained. **SEE ABOVE.**

Regarding septic tanks, Mr. Ricci remembers two small (100-gallon) septic tanks, one on the northwest side and one on the southeast side of Hawes Street. These septic tanks serviced rest rooms in the office areas on both parcels, providing rest room facilities for site workers. Mr. Ricci is not aware of where these septic tanks were located or their disposition.

11. For each Property, provide all reports, information or data you have related to soil, water (ground and surface), or air quality and geology/hydrogeology at and about each Property. Provide copies of all documents containing such data and information, including both past and current aerial photographs as well as documents containing analysis or interpretation of such data.

Attachment A includes copies of the reports listed in Question 4, as well as copies of the following reports.

Gribi Associates, 2007; *Phase I Environmental Site Assessment, Ricci Property, 1204, 1296, and 1320 Armstrong Avenue; 1200, 1295, 1301, 1335, and 1339 Yosemite Avenue, San Francisco, California; June 21..*

Gribi Associates, 2006a; *Workplan to Conduct Soil and Groundwater Investigation, Former Ricci & Kruse Lumber Co., 1295 Yosemite Street, San Francisco, California, July 11.*

Gribi Associates, 2006b; *Results of Soil and Groundwater Investigation, Former Ricci & Kruse Lumber Co., 1295 Yosemite Street, San Francisco, California, July 11.*

San Francisco Department of Public Health, 2006; *Remedial Action Completion Certification; December 13.*

12. Identify all past and present solid waste management units or areas where materials are or were in the past managed, treated, or disposed (e.g., waste piles, landfills, surface impoundments, waste lagoons, waste ponds or pits, tanks, container storage areas, etc.) on each Property. For each such unit or area, provide the following information:
- a map showing the unit/area's boundaries and the location of all known units/areas whether currently in operation or not. This map should be drawn to scale, if possible, and clearly indicate the location and size of all past and present units/areas;
 - dated aerial photograph of the site showing each unit/area;
 - the type of unit/area (e.g., storage area, landfill, waste pile, etc.), and the dimensions of the unit/area;
 - the dates that the unit/area was in use;
 - the purpose and past usage (e.g., storage, spill containment, etc.);

- f. the quantity and types of materials (hazardous substances and any other chemicals) located in each unit/area; and
- g. the construction (materials, composition), volume, size, dates of cleaning, and condition of each unit/area.

There were and are no solid waste management units on the Property. Relative to past operations,

City Debris formerly operated a wood reclamation facility at 1301 Yosemite Avenue (just northwest of Hawes Street, between Armstrong Avenue and Yosemite Avenue). City Debris apparently ran into difficulty when it was found that they did not have the proper permits from the California Integrated Waste Management Board (CIWMB). City Debris was apparently sited by the CIWMB and apparently abandoned the Property, leaving a large amount of debris and soil waste piled on the site. The CIWMB apparently disposed of the waste, and subsequently solicited Mr. Ricci to pay these disposal costs. Mr. Ricci apparently paid these fees, and no further action was required.

The northwest site parcel (northwest of Hawes Street) was apparently used as a landfill for ship debris and medical debris from ships returning to Hunters Point Naval Ship Yard after World War II. This debris would have probably been delivered via the Navy railroad tracks that are present near the northwest edge of the Property. Aerial photos showing this post-war landfill area are included separately in Attachment A and in the Gribi Associates Phase I ESA included in Attachment A.

13. For each Property, provide the following information regarding any current or former sewer or storm sewer lines or combined sanitary/storm sewer lines, drains, or ditches:
- a. the location and nature of each sewer line, drain, or ditch;
 - b. the date of construction of each sewer line, drain, or ditch;
 - c. whether each sewer line, or drain was ever connected to a main trunk line;
 - d. whether each sewer line, drain, or ditch drained any hazardous substance, waste, material or other process residue to Yosemite Creek.

The only sewer lines that we are aware of are those for bathrooms. These include two on the north parcel and two on the south parcel. There are no stormwater catch basins or drains on the Property; however, there may be drains in the street.

14. Provide copies of any stormwater or property drainage studies, including data from sampling, conducted at these Properties on stormwater, sheet flow, or surface water runoff. Also provide copies of any Stormwater Pollution Prevention, Maintenance Plans, or Spill Plans developed for different operations during the Respondent's operation of each Property. None

Section 4.0 Respondent's Operational Activities

15. Describe the nature of your operations or business activities at each Property. If the operation or business activity changed over time, please identify each separate operation or activity, the dates when each operation or activity was started and, if applicable, ceased.

The Ricci family operated Ricci & Kruse Limber on the southeast portion of the property (southeast of Hawes Street), beginning in approximately 1955. Ricci & Kruse Lumber Company stored and sold high-quality dry redwood, pine, and douglas fir. No wood treatment was conducted as part of these activities. Mr. Julio Ricci died in 1982, and Reginald Ricci inherited the lumber business. Due to a down turn in the lumber business, the Ricci & Kruse Lumber facility was closed in 1986. Subsequently, the Property was leased to various tenants. .

Two gasoline underground storage tanks (USTs) were previously located on the southeast site parcel, near the corner of Hawes Street and Yosemite Avenue. These USTs were removed in 1986. Subsequent investigation results indicate no significant soil or groundwater impacts relative to these former USTs. Reports related to these USTs and their removal and investigation are included in Attachment A.

Mr. Reginald Ricci, who has worked on the Property since its beginning, stated that, other than the operation of USTs, no significant amounts of hazardous substances or wastes have ever been used or stored on the Property, either during the Ricci & Kruse Lumber years or during subsequent tenant use of the Property

16. At each Property, did you ever use, purchase, generate, store, treat, dispose, or otherwise handle any waste, or material? If the answer to the preceding question is anything but an unqualified "no," identify: No.
- a. in general terms, the nature and quantity of the waste or material so transported, used, purchased, generated, stored, treated, disposed, or otherwise handled;
 - b. the chemical composition, characteristics, physical state (e.g., solid, liquid) of each waste or material so transported, used, purchased, generated, stored, treated, disposed, or otherwise handled;
 - c. how each such waste or material was used, purchased, generated, stored, treated, transported, disposed or otherwise handled by you; and
 - d. the quantity of each such waste or material used, purchased, generated, stored, treated, transported, disposed or otherwise handled by you.
17. Please describe the years of use, purpose, quantity, and duration of any application of pesticides or herbicides on each Property during the period of investigation (1945 – the present). Provide the brand name of all pesticides or herbicides used. None
18. Describe how wastes transported off the Property for disposal are and ever were handled, stored, and/or treated prior to transport to the disposal facility. Ricci & Kruse Lumber did not generate significant waste, other than normal trash. Since the late 1980s, when site use changed to various light industrial uses, the only wastes generated

have been primarily related to small scale vehicle maintenance. These limited waste oil wastes were the responsibility of individual tenants.

19. Has Respondent ever arranged for disposal or treatment or arranged for transportation for disposal or treatment of materials (including 55 gallon drums and other containers) to any Property (including, but not limited to, Bay Area Drum, Bedini Drum, California Bucket Co., Gonzalez Bucket Co., or Waymire Drum Co.) within the Investigation Area? If so, please identify every Property that Respondent's materials were disposed or treated at in the Investigation Area. In addition, identify: No
- the persons with whom the Respondent made such arrangements;
 - every date on which Respondent made such arrangements;
 - the nature, including the chemical content, characteristics, physical state (e.g., solid, liquid), and quantity (volume and weight) of all materials involved in each such arrangement;
 - in general terms, the nature and quantity of the non-hazardous materials involved in each such arrangement;
 - in general terms, the nature and quantity of any hazardous materials involved in each such arrangement;
 - the owner of the materials involved in each such arrangement, if not Respondent;
 - all tests, analyses, analytical results or manifests concerning each hazardous material involved in such transactions;
 - the address(es) for each Property, precise locations at which each material involved in such transactions actually was disposed or treated;
 - the owner or operator of each facility at which hazardous or non-hazardous materials were arranged to be disposed at within the Investigation Area;
 - who selected the location to which the materials were to be disposed or treated;
 - who selected the Property as the location at which hazardous materials were to be disposed or treated; and
 - any records of such arrangement(s) and each shipment.
20. List the types of raw materials used in Respondent's operations, the products manufactured, recycled, recovered, treated, or otherwise processed in these operations. **High quality finished lumber (redwood, pine, and douglas fir) was imported and distributed throughout the Bay Area. No milling or treating of wood was conducted, and no byproducts or wastes were generated by Ricci & Kruse Lumber.**
- Architectural Wood Products, which occupied the northwest portion of the Property from 1963 to 1990, did do some wood planing. Wood shavings were pickup up by a rancher from Pacifica who used the shavings for horse bedding.**
21. For each type of waste (including by-products) from Respondent's operations, including but not limited to all liquids, sludges, and solids, provide the following information: **None**
- its physical state;

- b. its nature and chemical composition;
 - c. its color;
 - d. its odor;
 - e. the approximate monthly and annual volumes of each type of waste (using such measurements as gallons, cubic yards, pounds, etc.); and
 - f. the dates (beginning & ending) during which each type of waste was produced by Respondent's operations.
22. Identify all individuals who currently have and those who have had responsibility for Respondent's environmental matters (e.g., responsibility for the disposal, treatment, storage, recycling, or sale of Respondent's wastes). Also provide each individual's job title, duties, dates performing those duties, supervisors for those duties, current position or the date of the individual's resignation, and the nature of the information possessed by such individuals concerning Respondent's waste management. **None**
23. For each type of waste describe Respondent's contracts, agreements, or other arrangements for its disposal, treatment, or recycling. **None**
24. Describe all wastes disposed by Respondent into Respondent's drains including but not limited to: **None**
- a. the nature and chemical composition of each type of waste;
 - b. the dates on which those wastes were disposed;
 - c. the approximate quantity of those wastes disposed by month and year;
 - d. the location to which these wastes drained (e.g., septic system or storage tank at the Property, pre-treatment plant, Publicly Owned Treatment Works (POTW), etc.); and
 - e. whether and what pretreatment was provided.
25. Describe all settling tank, septic system, or pretreatment system sludges or other treatment wastes resulting from Respondent's operations.
- Two septic tanks were located on the Property in the past, prior to connection to the City sewer system. These septic tanks were each approximately 100 gallons capacity, and these septic systems were connected to rest rooms in office areas on each of the two site parcels (northwest and southeast of Hawes Street).**
26. Describe any process or activity conducted on a Property identified in response to Question 4 involving the acquisition, manufacture, use, storage, handling, disposal or release or threatened release of polychlorinated biphenyls ("PCB's") or materials or liquids containing PCB's. **None**
27. For each process or activity identified in response to the previous Question, describe the dates and duration of the activity or process and the quantity and type of PCB's or materials or liquids containing PCB's. **None**
28. Describe any process or activity conducted on a Property identified in response to Question 4 involving the acquisition, manufacture, use, storage, handling, disposal or

release or threatened release of pesticides, including but not limited to Dichloro-Diphenyl-Trichloroethane ("DDT"), Chlordane or Dieldrin, or materials or liquids containing DDT, Chlordane or Dieldrin. **None**

29. For each process or activity identified in response to the previous Question, describe the dates and duration of the activity or process and the quantity and type of pesticides or materials or liquids containing pesticides. **None**
30. Describe any process or activity conducted on a Property identified in response to Question 4 involving the acquisition, manufacture, use, storage, handling, disposal or release or threatened release of heavy metals, including but not limited to lead, zinc or mercury, or materials or liquids containing lead, zinc or mercury. **None**
31. For each process or activity identified in response to the previous Question, describe the dates and duration of the activity or process and the quantity and type of heavy metals, or materials or liquids containing heavy metals. **None**

Section 5.0 Regulatory Information

32. Provide a list of all local, state and federal environmental permits ever issued to the owner or operator on each Property (e.g., RCRA permits, NPDES permits, etc.). Please provide a copy of each federal and state permit ever issued to the owner or operator on each Property.

Mr. Ricci is unaware of any environmental permits ever issued (or required) for Ricci & Kruse Lumber. Subsequent to Ricci & Kruse Lumber, the Riccis, as landlords only, have made tenants responsible for permits. None of the tenants activities result in significant generation of hazardous waste or require significant permitting.

33. Did the owner or operator ever file a Hazardous Waste Activity Notification under the RCRA? If so, provide a copy of such notification. **No**
34. Provide all RCRA Identification Numbers issued to Respondent by EPA or a state for Respondent's operations. **We are not aware of any.**

Section 6.0 Releases and Remediation

35. Identify all leaks, spills, or releases into the environment of any waste, including PCB's, pesticides, heavy metals, petroleum, hazardous substances, pollutants, or contaminants, that have occurred at or from each Property. In addition, identify, and provide copies of any documents regarding:
- a. when such releases occurred;
 - b. how the releases occurred (e.g., when the substances were being stored, delivered by a vendor, transported or transferred (to or from any tanks, drums, barrels, or recovery units), and treated);

- c. the amount of each hazardous substances, pollutants, or contaminants so released;
- d. where such releases occurred;
- e. any and all activities undertaken in response to each such release or threatened release, including the notification of any agencies or governmental units about the release;
- f. any and all investigations of the circumstances, nature, extent or location of each release or threatened release including, the results of any soil, water (ground and surface), or air testing undertaken;
- g. all persons with information relating to these releases; and
- h. list all local, state, or federal departments or agencies notified of the release, if applicable.

FORMER NAVY LANDFILL

Contamination was encountered beneath Armstrong Avenue in 1986 during the installation of a sewer line by the City of San Francisco Department of Public Works (SFPDW). The SFPDW subsequently contracted various investigations to assess soil and groundwater impacts. These investigations identified several CERCLA hazardous substances, quoted in the December 1990 CERCLA Preliminary Assessment Report as follows: "Several CERCLA hazardous substances, including polychlorinated biphenyls (PCBs) and cadmium, were found to exist in groundwater and soil. Laboratory analyses revealed 3.7 mg/kg PCBs as Aroclor 1260 in monitoring well MW-1; 800 parts per billion (ppb) benzene and 1,200 ppb xylene in groundwater sample 7A; and 680 ppm total petroleum hydrocarbons, 12 ppm cadmium and 230 ppm lead in soil boring 7A" (page 5)

This contamination was reported to the Enforcement Section of the EPA by an attorney for Buckeye Properties in September 1989 (copies of letters included in Attachment A).

The 1993 CERCLA Site Inspection Report indicates that during excavation of contaminated fill for the Yosemite-Fitch Outfall Consolidation (YFOC) project, it was noted from photos that: (1) Visual contamination was not present in the upper two feet of soil beneath the Property; and (2) It is likely that downward migration of contamination is impeded by Bay Mud, which is present at about 15 feet in depth. Although the lateral extent of contamination was not determine, the report notes that "contamination of fill is widespread in San Francisco" (page 5-1). Some of the waste materials were removed during the sewer construction project. Analysis of the waste indicated the following hydrocarbon constituents: 5,400 mg/kg of Acenaphthylene; 4,100 mg/kg of Flouranthene; 48,000 mg/kg of Napthalene; 11,000 mg/kg of Phenanthrene; and 470,000 mg/kg of TPH.

This report included the following summary of onsite and offsite subsurface soil impacts. These impacts do not include the area of known contamination at the

corner of Armstrong Avenue and Hawes Street.

Onsite and Offsite Subsurface Soil Contamination				
Analyte	Onsite Concentration Ranges (mg/kg)		Offsite Concentration Ranges (mg/kg)	
	Low	High ¹	Low	High ¹
Cresol	<10	<10	NA	NA
Pentachlorophenol	<10	<10	NA	NA
PCBs	<0.1	<0.1	<0.1	<0.1
Cyanide	<0.2	<0.2	<0.2	<0.2
Cadmium	0.2	12 (7i)	<0.2	1.8 (12)
Chromium	37	210 (MW-4)	24	320 (11)
Copper	19	440 (7i)	10	330 (BH-3)
Lead	11	230 (7i)	11	740 (12)
Nickel	28	380 (MW-4)	16	490 (11)
Zinc	35	7,400 (7i)	37	390 (12)
Mercury	0.12	0.039 (BH-6)	0.054	0.071 (11)
Tetrachloroethene	<0.005	<0.05	<0.005	0.38 (9)
1,2-Dichloroethene	<0.05	<0.05	<0.05	0.26 (12)
Benzene	<0.005	0.66 (8)	<0.005	0.11 (9)
Toluene	<0.05	1.3 (6)	<0.05	0.89 (9)
Chlorobenzene	<0.05	<0.05	<0.05	3.3 (11)
1,3-Dichlorobenzene	<0.05	<0.05	<0.05	1.5 (11)
Ethylbenzene	<0.005	<0.05	<0.005	1.0 (11)
TPH	<5	57 (MW-4)	15	2,500 (BH-4)

¹ = Location (boring identification) is given in parentheses.

This report also included the following summary of onsite and offsite groundwater impacts. These impacts do not include the area of known contamination at the corner of Armstrong Avenue and Hawes Street.

Onsite and Offsite Groundwater Contamination				
Analyte	Onsite Concentration Ranges (ug/l)		Offsite Concentration Ranges (ug/l)	
	Low	High ¹	Low	High ¹
Chromium	--	90 (MW-4)	19	60 (MW-6)
Copper	--	90 (MW-4)	<50	170 (MW-6)

Onsite and Offsite Groundwater Contamination				
Analyte	Onsite Concentration Ranges (ug/l)		Offsite Concentration Ranges (ug/l)	
	Low	High ¹	Low	High ¹
Lead	--	200 (MW-4)	<5.0	20 (MW-6)
Nickel	--	190 (MW-4)	80	290 (MW-6)
Mercury	--	<1.0	<1.0	<1.0
Tetrachloroethene	<5.0	170 (7A)	<5.0	<5.0
1,1-Dichloroethene	<5.0	800 (7A)	<5.0	<5.0
Benzene	<5.0	140 (7A)	<5.0	<5.0
Toluene	<5.0	1,000 (7A)	<5.0	<5.0
Ethylbenzene	<5.0	1,200 (7A)	<5.0	<5.0
TPH	<100	680 (7A)	<100	100 (MW-5)

¹ = Location (boring identification) is given in parentheses.

This report also included the following summary of surface water sediment impacts adjacent to South Basin Inlet. This sampling was conducted in 1989 by the California Parks and Recreation Department.

Surface Water Sediment Impacts									
Analyte	Adjacent to Property Concentrations (mg/kg)		Offsite Concentrations (mg/kg)						
	CS3	CS4	CS1	CS2	CS5	CS6	CS7	CS8	CS9
Chromium	227	42	41	250	48	680	65	14	90
Copper	17	34	22	76	110	140	170	95	74
Lead	29	140	1,300	420	470	420	170	200	210
Nickel	21	28	180	37	56	550	62	35	41
TPH	68	990	98	1,200	660	360	280	960	1,300

This report includes a decision stating that the site "does not qualify for future remedial site assessment under CERCLA" (page 8-1). The basis for this decision was that: (1) Hydrocarbons and metals contamination is widespread in bay fill materials and sediments, and contaminants beneath the site have not been associated with known onsite activities; (2) Groundwater use is limited in the site vicinity; and (3) While sediments in South Basin Inlet are contaminated with hydrocarbons and metals, this contamination cannot be attributed to the project site, since there are numerous potential offsite sources.

Copies of these reports are included in Attachment A.

FORMER SITE UST'S

Mr. Ricci provided: (1) A copy of contract between Standard Oil and Ricci & Kruse Lumber dated August 15, 1955 documenting the purchase of one 1,000-gallon gasoline underground tank (UST) located at "Hawes and Yosemite Avenue"; (2) An approved tank removal permit dated May 5, 1986 for one 1,000-gallon gasoline UST located 5 feet south from the intersection of Hawes Street and Yosemite Avenue and one 2,000-gallon gasoline UST located 80 feet south from the intersection of Hawes Street and Yosemite Avenue; (3) A report dated June 11, 1986 from Harding Lawson Associates (HLA) documenting the removal and sampling of the two site USTs and including a site plan showing approximate UST locations; and (4) A letter from San Francisco Department of Public Health to Ricci & Kruse Lumber requesting a sampling plan for the former USTs.

The HLA report states that the 1,000-gallon UST was a single-walled steel tank in a concrete cradle or box with brown sand and gravel backfill. Upon removal, the tank showed some scaling and corrosion, with a small hole in the tank bottom on the south end of the tank. Groundwater was present in the tank excavation at about 3.5 feet in depth, and a hydrocarbon sheen was noted on the water surface. Soils surrounding the tank consisted of variable fill that included glass, organic matter,

and metal. A soil sample collected three feet below the excavation floor showed 500 parts per million (ppm) of Total Petroleum Hydrocarbons as Gasoline (TPH-G), and a water sample collected from the excavation cavity showed 88 ppm of TPH-G.

The 2,000-gallon UST, which was apparently installed in 1983, was constructed of tar-wrapped steel. Upon removal, the tank and tar-wrapping appeared to be in good condition. Backfill surrounding the tank consisted of brown sand. Groundwater was encountered in the excavation at a depth of about 5.0 feet below surface grade and exhibited a slight hydrocarbon sheen. A soil sample collected three feet below the excavation floor showed 110 ppm of TPH-G, and a groundwater sample from the excavation showed 100 ppm of TPH-G.

In order to assess possible groundwater impacts relative to the two former site USTs, Gribi Associates drilled and sampled two soil borings in an expected downgradient (east) groundwater flow direction from each of the two former UST locations. In addition, Gribi Associates also drilled two soil borings in an expected upgradient (west) groundwater flow direction from each of the former UST locations. The borings were drilled and sampled using direct-push coring equipment. Only groundwater samples were collected and submitted for laboratory analysis.

Four borings (B-1 through B-4) were drilled and sampled in the vicinity of the former 1,000-gallon gasoline UST. Laboratory results of the groundwater samples from the four borings showed minor levels of gasoline-range hydrocarbons at each boring location; TPH-g, benzene, and MTBE showed detectable levels at all four boring locations, with levels concentrations in groundwater ranging from 130 ppb to 280 ppb TPH-G, 5.5 ppb to 19 ppb benzene, 5.5 to 24 ppb MTBE. Toluene was detected in groundwater samples from borings B-3 and B-4 at concentrations of 1.6 ppb and 2.4 ppb, respectively. Total Xylenes were also detected in groundwater from boring B-4 at a concentration of 2.4 ppb. In addition, the groundwater sample collected at B-2 was also analyzed for TDS and showed a concentration of 580 ppb.

Four borings (B-5 through B-8) were drilled and sampled in the vicinity of the former 2,000-gallon gasoline UST. Laboratory results of the groundwater samples from the four borings also showed minor levels of gasoline-range hydrocarbons at three of the four boring locations. The groundwater sample from B-8 showed no detectable levels for any compounds. TPH-G and benzene were detected in three remaining boring locations at concentrations ranging from 130 ppb to 1,900 ppb TPH-G and 3.0 ppb to 18 ppb benzene. Xylenes were detected in groundwater samples from borings B-5 and B-6 at concentrations of 7.7 ppb and 5.6 ppb, respectively. Toluene was detected in groundwater from B-6 at a concentration of 1.4 ppb. Ethylbenzene was detected in groundwater from B-5 at a concentration of 6.1 ppb. In addition, the groundwater sample collected at B-7 was also analyzed for TDS and showed a concentration of 1,900 ppb.

Groundwater results of the soil boring investigation show detectable, but relatively

minor levels of gasoline-range hydrocarbons in groundwater in the vicinity of the former gasoline USTs. Due to the location of the soil borings which are in close proximity to the San Francisco Bay, it is unlikely that groundwater would presently or potentially have a beneficial use.

Groundwater laboratory analytical results from the eight borings are summarized below.

SUMMARY OF GROUNDWATER LABORATORY ANALYTICAL RESULTS							
Boring ID	Concentrations in parts per billion (micrograms per liter)						
	TPH-G	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TDS
1,000-Gallon (North) UST							
B-1	280	15	<1.0	<1.0	<1.0	24	NA
B-2	130	5.5	<1.0	<1.0	<1.0	8.1	580
B-3	140	19	1.6	<1.0	<1.0	7.1	NA
B-4	190	8.5	2.4	<1.0	2.4	5.5	NA
2,000-Gallon (South) UST							
B-5	1,900	18	<1.0	6.1	7.7	<4.0	NA
B-6	990	3.0	1.4	<1.0	5.6	<4.0	NA
B-7	130	7.4	<1.0	<1.0	<1.0	<4.0	1,800
B-8	<50	<1.0	<1.0	<1.0	<1.0	<4.0	NA

Table Notes:

Groundwater samples were collected on September 5, 2006.

TPH-G = Total Petroleum Hydrocarbons as Gasoline

MTBE = Methyl Tert-Butyl Ether

TDS = Total Dissolved Solids

NA = Not Analyzed

On December 13, 2006, the San Francisco Department of Public Health granted regulatory closure for the former USTs on the Property, based on the results of the Gribi Associates investigation

36. Was there ever a spill, leak, release or discharge of waste, including PCB's, pesticides, heavy metals, petroleum, or hazardous substances, pollutant or contaminant into any subsurface disposal system, floor drain, sewer drain or storm drain on the Property? If the answer to the preceding question is anything but an unqualified "no", identify: No
- where the disposal system or floor drains were located;
 - when the disposal system or floor drains were installed;
 - whether the disposal system or floor drains were connected to pipes;
 - where such pipes were located and emptied;
 - when such pipes were installed;
 - how and when such pipes were replaced, or repaired; and

- g. whether such pipes ever leaked or in any way released such waste or hazardous substances into the environment.
37. Has any contaminated soil ever been excavated or removed from the Property? Unless the answer to the preceding question is anything besides an unequivocal "no", identify and provide copies of any documents regarding: **No. Soil was removed on adjacent right-of-ways by the City as part of the Yosemite-Fitch Outfall Consolidation project, but not on the Property itself.**
- a. amount of soil excavated;
 - b. location of excavation presented on a map or aerial photograph;
 - c. manner and place of disposal and/or storage of excavated soil;
 - d. dates of soil excavation;
 - e. identity of persons who excavated or removed the soil, if other than a contractor for Respondent;
 - f. reason for soil excavation;
 - g. whether the excavation or removed soil contained hazardous substances, pollutants or contaminants, including petroleum, what constituents the soil contained, and why the soil contained such constituents;
 - h. all analyses or tests and results of analyses of the soil that was removed from the Property;
 - i. all analyses or tests and results of analyses of the excavated area after the soil was removed from the Property; and
 - j. all persons, including contractors, with information about (a) through (i) of this request.
38. Have you ever tested the groundwater under your Property? If so, please provide copies of all data, analysis, and reports generated from such testing. **Yes. Results are summarized in Question 35 above, and copies of reports are included in Attachment A.**
39. Have you treated, pumped, or taken any kind of response action on groundwater under your Property? Unless the answer to the preceding question is anything besides an unequivocal "no", identify and provide copies of any documents regarding: **No. Groundwater was removed on adjacent right-of-ways by the City as part of the Yosemite-Fitch Outfall Consolidation project, but not on the Property itself.**
- a. reason for groundwater action;
 - b. whether the groundwater contained hazardous substances, pollutants or contaminants, including petroleum, what constituents the groundwater contained, and why the groundwater contained such constituents;
 - c. all analyses or tests and results of analyses of the groundwater;
 - d. if the groundwater action has been completed, describe the basis for ending the groundwater action; and

- e. all persons, including contractors, with information about (a) through (c) of this request.
40. For any releases or threatened releases of PCB's, identify the date, quantity, location and type of PCB's, or materials or liquids containing PCB's, and the nature of any response to or cleanup of the release. **None**
41. For any releases or threatened releases of PCB's and/or materials or liquids containing PCB's, identify and provide copies of any documents regarding the quantity and type of waste generated as a result of the release or threatened release, the disposition of the waste, provide any reports or records relating to the release or threatened release, the response or cleanup and any records relating to any enforcement proceeding relating to the release or threatened release. **None**
42. For any releases or threatened releases of pesticides, including but not limited to DDT, Chlordane or Dieldrin, identify the date, quantity, location and type of pesticides, or materials or liquids containing pesticides, and the nature of any response to or cleanup of the release. **None**
43. For any releases or threatened releases of pesticides and/or materials or liquids containing pesticides, identify and provide copies of any documents regarding the quantity and type of waste generated as a result of the release or threatened release, the disposition of the waste, provide any reports or records relating to the release or threatened release, the response or cleanup and any records relating to any enforcement proceeding relating to the release or threatened release. **None**
44. For any releases or threatened releases of heavy metals, including but not limited to lead, zinc or mercury, identify the date, quantity, location and type of heavy metals, or materials or liquids containing heavy metals, and the nature of any response to or cleanup of the release. **None**
45. For any releases or threatened releases of heavy metals and/or materials or liquids containing heavy metals, identify and provide copies of any documents regarding the quantity and type of waste generated as a result of the release or threatened release, the disposition of the waste, provide any reports or records relating to the release or threatened release, the response or cleanup and any records relating to any enforcement proceeding relating to the release or threatened release. **None**

Section 7.0 Property Investigations

46. Describe the purpose for, the date of initiation and completion, and the results of any investigations of soil, water (ground or surface), sediment, geology, and hydrology or air quality on or about each Property. Provide copies of all data, reports, and other documents that were generated by you or a consultant, or a federal or state regulatory agency related to the investigations that are described. **SEE QUESTION 35.**
47. Describe any remediation or response actions you or your agents or consultants have ever taken on each Property either voluntarily or as required by any state or federal agency. If

not otherwise already provided under this Information Request, provide copies of all investigations, risk assessments or risk evaluations, feasibility studies, alternatives analysis, implementation plans, decision documents, monitoring plans, maintenance plans, completion reports, or other document concerning remediation or response actions taken on each Property. **SEE QUESTION 35.**

48. Are you or your consultants planning to perform any investigations of the soil, water (ground or surface), geology, hydrology, and/or air quality on or about the Property? If so, identify: **No**
- a. what the nature and scope of these investigations will be;
 - b. the contractors or other persons that will undertake these investigations;
 - c. the purpose of the investigations;
 - d. the dates when such investigations will take place and be completed; and
 - e. where on the Property such investigations will take place.

Section 8.0 Corporate Information

49. Provide the following information, when applicable, about you and/or your business(es) that are associated with each Property identified in response to Question 4:

- a. state the current legal ownership structure (e.g., corporation, sole proprietorship);

RWD Associates, LLC is a limited liability corporation.

- b. state the names and current addresses of current and past owners of the business entity or, if a corporation, current and past officers and directors;

RWD Associates, LLC has always been owned wholly by Stephanie Ricci

- c. discuss all changes in the business' legal ownership structure, including any corporate successorship, since the inception of the business entity. For example, a business that starts as a sole proprietorship, but then incorporates after a few years, or a business that is subsequently acquired by and merged into a successor. Please include the dates and the names of all parties involved;

The Property was originally purchased by Julio and Anita Ricci. In 1987, the Property was transferred to Buckeye Properties, a partnership consisting of Reginald Ricci, solely, and Reginald Ricci, Executor for the Estate of Anita Ricci, deceased. In 1999, the Property was transferred to RWD Associates, LLC.

- d. the names and addresses of all current or past business entities or subsidiaries in which you or your business has or had an interest that have had any operational or ownership connection with the Properties identified in response to Question 4.

Briefly describe the business activities of each such identified business entities or subsidiaries; **None.** and

- e. if your business formerly owned or operated a Property identified in response to Question 4, describe any arrangements made with successor owners or operators regarding liability for environmental contamination or property damage. **None**

50. List all names under which your company or business has ever operated and has ever been incorporated. For each name, provide the following information:
- a. whether the company or business continues to exist, indicating the date and means by which it ceased operations (e.g., dissolution, bankruptcy, sale) if it is no longer in business; **Buckeye Properties was dissolved in 1999 upon transfer of the Property to RWD Associates, LLC.**
 - b. names, addresses, and telephone numbers of all registered agents, officers, and operations management personnel; **contact information for Buckeye Properties same as for RWD Associates, LLC and**
 - c. names, addresses, and telephone numbers of all subsidiaries, unincorporated divisions or operating units, affiliates, and parent corporations if any, of the Respondent. **None**
51. Provide all copies of the Respondent's authority to do business in California. Include all authorizations, withdrawals, suspensions and reinstatements.
52. If Respondent is, or was at any time, a subsidiary of, otherwise owned or controlled by, or otherwise affiliated with another corporation or entity, then describe the full nature of each such corporate relationship, including but not limited to: **None**
- a. a general statement of the nature of relationship, indicating whether or not the affiliated entity had, or exercised, any degree of control over the daily operations or decision-making of the Respondent's business operations at the Site;
 - b. the dates such relationship existed;
 - c. the percentage of ownership of Respondent that is held by such other entity(ies);
 - d. for each such affiliated entity provide the names and complete addresses of its parent, subsidiary, and otherwise affiliated entities, as well as the names and addresses of each such affiliated entity's officers, directors, partners, trustees, beneficiaries, and/or shareholders owning more than five percent of that affiliated entity's stock;
 - e. provide any and all insurance policies for such affiliated entity(ies) which may possibly cover the liabilities of the Respondent at each Property; and
 - f. provide any and all corporate financial information of such affiliated entities, including but not limited to total revenue or total sales, net income, depreciation, total assets and total current assets, total liabilities and total current liabilities, net working capital (or net current assets), and net worth.
53. If Respondent is a partnership, please describe the partnership and provide a history of the partnership's existence. Provide a list of all current and past partners of any status (e.g., general, limited, etc.) and provide copies of all documents that created, govern, and

otherwise rules the partnership, including any amendments or modifications to any of the originals of such documents, and at least five years of partnership meeting minutes. No

Section 9.0 Compliance With This Request

54. If not already provided, identify and provide a last known address or phone number for all persons, including Respondent's current and former employees or agents, other than attorneys, who have knowledge or information about the generation, use, purchase, storage, disposal, placement, or other handling of hazardous materials at, or transportation of hazardous substances, waste, or materials to or from, each Property identified in response to Question 4.

Reginald and Stephanie Ricci
4 Buckeye Road
Belvedere, CA 94920
Phn: 415.271.0345

Appendix C
PRP Group Attorney Letter to EPA, December 2012

January 20, 2012

Via Email

Thanne Cox, Esq.
Office of Regional Counsel
U.S. Environmental Protection Agency, Region IX
75 Hawthorne Street
San Francisco, CA 94105

Re: Yosemite Slough Superfund Site, San Francisco, California

Dear Thanne:

On behalf of the Yosemite Slough PRP Group (the "Group"), I write to follow-up regarding EPA's continued investigation of the sources of contamination to the Yosemite Slough Superfund Site (the "Site"), and specifically to address the historic Buckeye Properties site located at 1296 Armstrong Avenue, San Francisco, California (the "Buckeye Properties Site"). As explained more fully below, the Response to EPA's 104(e) Request related to the Buckeye Properties Site by RWD Associates, LLC ("RWD"), the current owner, particularly when considered in light of the sampling data recently reported in EPA's May 2011 Yosemite Creek Sediment Removal Assessment Report (the "2011 Sediment Report"), indicates that contamination in the slough sediments, including PCBs, likely originated from the Buckeye Properties Site. Based on this information, the Group respectfully requests that EPA issue a General Notice Letter to RWD naming it as a PRP at the Yosemite Slough Superfund Site.

The Buckeye Properties Site covers roughly seven acres on two blocks located along the south shore of Yosemite Slough. *See* Buckeye Properties CERCLA Preliminary Assessment, December 7, 1990 ("Buckeye PA") at 2 (attached hereto as Attachment "A"); *see also* Buckeye Properties CERCLA Site Inspection Report, June 14, 1993 ("Buckeye SI Report") at Figure 5-1 (attached hereto as Attachment "B"). The Buckeye Properties Site was created by filling tidal flats between approximately 1943 and 1955, *see* Buckeye PA at 2, and has a long history of mixed industrial uses. *See* Buckeye SI Report at 3-4 to 3-5.

According to EPA's 1990 CERCLA Preliminary Assessment, during installation of a sewer line under Armstrong Ave. by the San Francisco DPW in 1986, various types of contamination were found in the groundwater and soil beneath the Buckeye Properties Site. *See*

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Buckeye PA at 5. Notably, PCB contamination as Aroclor 1260 was found at a concentration of 3.7 mg/kg in a monitoring well located near the northwest corner of Armstrong Ave. and Hawes Street.¹ *Id.* Cadmium and benzene also were found in groundwater samples, and TPH, cadmium and lead were found in soil samples. *Id.*

Our review of sampling data reported in the 2011 Sediment Report indicates that the location of the PCBs as Aroclor 1260 found on the Buckeye Properties Site appear to be consistent with nearby hits of Aroclor 1260 close to the head of the slough at sampling locations YC-003 and YC-008. These hits are shown as an apparent hot spot at the 1-2 foot sampling depth on the Aroclor 1260 Contour Profile attached as Figure 5 to the 2011 Sediment Report. (The Contour Profile is attached hereto as Attachment "D").

Moreover, in addition to reporting the existence of contamination, including PCBs, at the Buckeye Properties Site, EPA's Buckeye Preliminary Assessment also noted that releases of this contamination to nearby Bay waters (*i.e.*, Yosemite Slough) were likely: "The likelihood of release to surface waters appears to be high due to the potential to release by overland flow, by flood, and by leaching of contaminated groundwater into San Francisco Bay." Buckeye PA at 6. The Preliminary Assessment also recognized that that, "[s]urface water may easily run off the site into the San Francisco Bay due to several factors," and that "contaminated groundwater within the fill area could migrate through tidal influence into the San Francisco Bay." *Id.* at 7.

EPA followed-up on the Buckeye Preliminary Assessment with a CERCLA Site Inspection in 1993. "After reviewing the [Preliminary Assessment], EPA decided that further investigation of the Buckeye Properties site would be necessary to more completely evaluate the site using EPA's Hazard Ranking System (HRS) criteria." Buckeye SI Report at 1-1. Although the Buckeye Site Inspection Report did not cite the earlier PCB findings reported in the Preliminary Assessment, it recognized that soil and groundwater beneath the Buckeye Properties Site was contaminated with a variety of contaminants, including metals and hydrocarbons. *Id.* at 4-1 to 5-8. EPA's Inspection Report also states, "[b]ecause of the proximity of the [Buckeye Properties] site to the inlet [Yosemite Slough], the contamination of groundwater, and the known communication between groundwater and surface water, it is likely that contaminants beneath the site have migrated to surface-water sediments." *Id.* at 5-11.

Along with the migration mechanisms discussed above, the installation of the sewer lines under Armstrong Ave. and Hawes Street by the San Francisco DPW likely created a preferential pathway for contamination at the Buckeye Properties Site to reach Yosemite Slough. A Phase I Report dated March 20, 1990 regarding the Buckeye Properties Site states, "the porous backfill of the sewer and outfall basin may provide for migration of contamination around the perimeter of the subject property, and may provide for an exposure pathway to aquatic life in South Basin,

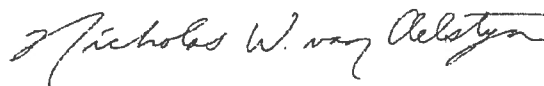
¹ This monitoring well is shown as OW-3 on the Location Map attached as Plate 14 to the Phase I Report for Property located in San Francisco, CA, dated March 26, 1990 (the "Phase I Report") (attached hereto as Attachment "C") and the Certificate of Analysis for the PCBs sample is included in Attachment D to the Phase I Report.

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if any.” Phase I Report at 4. Indeed, the Contaminant Distribution Map attached as Plate 15 to the Phase I Report shows that the estimated extent of the contaminant plume tracks the sewer lines to very near the south shoreline of Yosemite Slough. In addition, an areal photo of the slough included with the Buckeye Properties Response to EPA’s 104(e) Request shows apparent construction work located in the slough in the vicinity of the PCB Aroclor 1260 hot spot identified in the 2011 Sediment Report. *See* Areal Photo of Yosemite Slough Area (attached hereto as Attachment “E”).

None of the contamination present at the Buckeye Properties Site — including PCBs as Aroclor 1260 — appears ever to have been remediated. As discussed above, investigations of the Buckeye Properties Site concluded that contaminants likely migrated to Yosemite Slough. That conclusion some twenty years ago appears to have been confirmed by the recent sediment sampling data, which shows a hot spot of PCBs as Aroclor 1260 near where the sewer line was installed at the Buckeye Properties Site and the slough. In light of the foregoing, the Group respectfully requests that EPA issue a General Notice Letter to RWD, the current owner of the Buckeye Properties Site, naming it as a PRP at the Yosemite Slough Superfund Site.

Sincerely,

A handwritten signature in cursive script, reading "Nicholas W. van Aelstyn".

Nicholas W. van Aelstyn

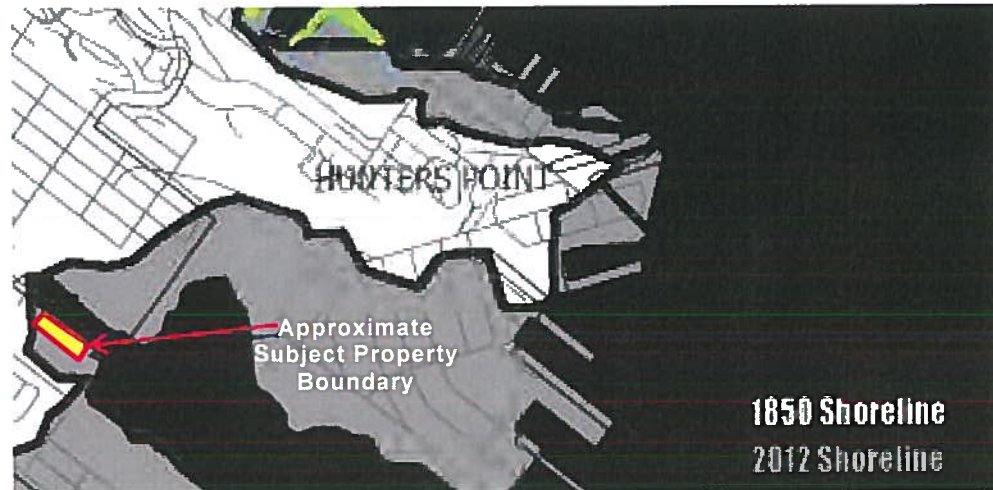
Enclosures

Appendix D
Site History and Formation of Subject Property (Aerial
Photos)

APPENDIX D HISTORY OF BAY INFILL AND CREATION OF SUBJECT PROPERTY

The original shoreline configuration of San Francisco Bay surrounding Hunters Point is shown on Inset Figure 1 below. The map shows the area infilled after 1850 (pre-development) to create the 2012 shoreline configuration (taken from <http://www.sewsf.org/abouthunterspoint.html>).

Inset Figure 1: Hunters Point Shoreline: 1850 vs. 2012



As shown on Figure 2, the smaller bay area southwest of Hunters Point is known as the South Basin, and the Yosemite Slough is a small finger of the bay that extends to the northwest from South Basin.

1.0 1860's-1920's: Development of Hunters Point for Dry Dock Facility

Hunters Point has been an important area for the maritime industry in San Francisco since the mid-1860's. William C. Ralston, a San Francisco businessman and director of the California Steam Navigation Company, commissioned the building of a dry dock at Hunters Point in 1866, which could accommodate nearly any size ship in the world at the time (Dow, 1973). In 1900, the US began to trade with countries in the Far East, and additional dry dock facilities were needed in the San Francisco Bay area. In 1901, construction began on a second dry dock at Hunters Point. This adjacent dry dock formally opened in January of 1903, and was ranked among the largest in the world. In 1908, the Bethlehem Steel Company purchased the dry docks and repair facilities, and ultimately operated under the name Bethlehem Shipbuilding Company, Ltd (Bethlehem).

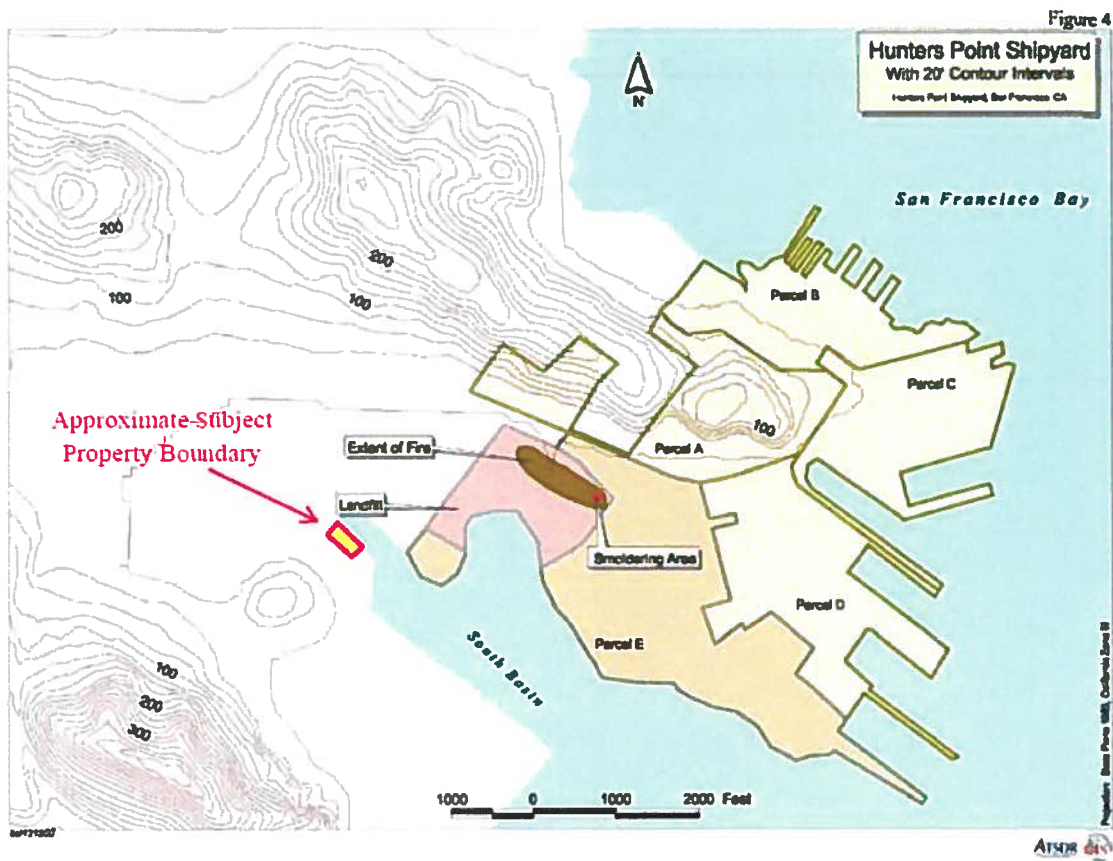
The Navy was involved in the area as early as 1919, when Dry Dock Number One at Hunters Point was first used for docking Navy battleships. The Navy was eventually responsible for expanding the land around Hunters Point (including the Subject Property) through multiple infilling episodes of adjacent Bay tidelands, and eventually subsidized the enlargement of the original Dry Dock Number One.

APPENDIX D HISTORY OF BAY INFILL AND CREATION OF SUBJECT PROPERTY

2.0 1940's: US Navy-Enlargement of Hunters Point

In 1939, due to world events leading to World War II, Congress authorized the acquisition of Bethlehem's dry dock facilities at Hunters Point. The Navy took possession of Bethlehem's dry dock on December 18, 1941, eleven days after the bombing of Pearl Harbor. The facility was named Hunters Point Naval Dry Docks and was later designated Hunters Point Naval Shipyard (Naval Shipyard). Bethlehem continued to operate the facility for its operations under lease from the Navy. The facility boundaries are shown on Inset Figure 2 below (taken from http://www.atsdr.cdc.gov/HAC/PHA/reports/hunterspoint_03022001ca/images/hun_f4.jpg):

Inset Figure 2: Hunters Point Shipyard Boundaries
(note the topographically higher areas that comprised the original Hunters Point and surrounding San Francisco Bay shoreline area)



A significant amount of work was performed by the Navy to build a naval shipyard capable of handling the maritime war effort. In order to do this, the facility needed to be increased in size. Most of the additional acreage needed for the enlargement was obtained by filling in near shore Bay tidelands to raise those submerged, or intermittently submerged, Bay margin areas to elevations permanently above sea level to make it usable for Navy purposes.

APPENDIX D

HISTORY OF BAY INFILL AND CREATION OF SUBJECT PROPERTY

Because of the continuous need for expansion of ship docking facilities at Hunters Point, and its eventual conversion to a US Naval Base, many episodes of infilling areas that were at or below sea level in the Bay, or that were Bay tidelands around Hunters Point, occurred at different times throughout the facility's history. The most significant period of infilling took place during the years surrounding World War II, or roughly the 1940s and early to mid-1950s. Figure 6 is a map showing the expansion of dry land caused by infilling from 1850 to 1995.

During the war, and immediate post war period, most of the historic Bay tidelands in the South Basin which were under government control were subject to considerable fill and dumping operations either by the U.S. Government, its contractors, or private individuals on behalf of the Navy. The filling of the Bay margin in the South Basin occurred on an 'as-needed' basis, with some infilling caused by the disposal of waste materials in landfilling activities (see landfill area designated in pink shade on Inset Figure 2 above). This occurred both within the boundaries of the Naval Shipyard, as shown in Inset Figure 2, as well as outside the boundaries of the Naval Shipyard, including an area of the Subject Property that is known to be an old Navy landfill area.

The Navy constructed a railroad spur to the southwest of the Naval Shipyard in 1942. This railroad spur is located on the western (northwestern) border of the Subject Property, as shown on Figures 2 and 3 and 4. The Navy reportedly restricted access to the east (and south) on the Bay side of the railroad spur (where the Subject Property is located) during the 1940s and early 1950s. This is significant because the Navy controlled all access and activities at the Subject Property, between 1942 and the 1950's, when RWD took ownership of the Subject Property. From 1945 to 1974, the Navy maintained and repaired ships at the Naval Shipyard. The facility was deactivated in 1974, and remained relatively unused until 1976, when it was leased to a private ship repair company (Triple A Machine Shop). The Navy resumed occupancy of the Naval Shipyard from 1986 to 1991, when the facility was closed pursuant to the Defense Base Realignment and Closure Act of 1990.

3.0 Subject Property Infill History-Aerial Photograph Review

Waterstone reviewed numerous aerial photographs to document the sequence of Bay infilling episodes that eventually resulted in the Subject Property becoming a "dry land." Figure 6 is excerpted from a technical report that documents filled areas along the San Francisco Bay for the purposes of evaluating land movement in earthquakes. Figure 5 shows the area of the Subject Property that was part of the San Francisco Bay until sometime after 1915, and before 1950. Other historical information, consisting of topography maps and aerial photographs that pre-date 1938, document the fact that the Subject Property was open water prior to 1938.

3.1 Prior to 1938: Subject Property is Open Water

Inset Figure 3 (below) is an aerial photograph from 1938. This photograph shows the Subject Property located entirely within open water of the San Francisco Bay (Bay), with the exception of a tiny sliver of land along the northwestern property boundary that appears to be in the tidal zone (underwater during high tides and dry land at low tides).

APPENDIX D HISTORY OF BAY INFILL AND CREATION OF SUBJECT PROPERTY

Northwest of the Subject Property is a larger wetland area near the former inlet (yellow arrow) of the Yosemite Creek/Slough, with a sandbar and evidence of urban discharge from stormwater sewers including suspended solids and possible oils (white dashed arrows). The shoreline area within ¼ mile of the Subject Property appears to be in a relatively native state, with no discernible evidence of recent fill encroaching on the San Francisco Bay.

Inset Figure 3: 1938 Aerial Photograph



During World War II, a massive expansion of the Navy's facilities at Hunters Point is observed in historical aerial photography (imagery from various sources). This expansion included leveling the native bedrock hills of Hunters Point and using the removed rock to fill contiguous areas well into the San Francisco Bay. All of these new lands were developed with ship building facilities in the Naval Shipyard area.

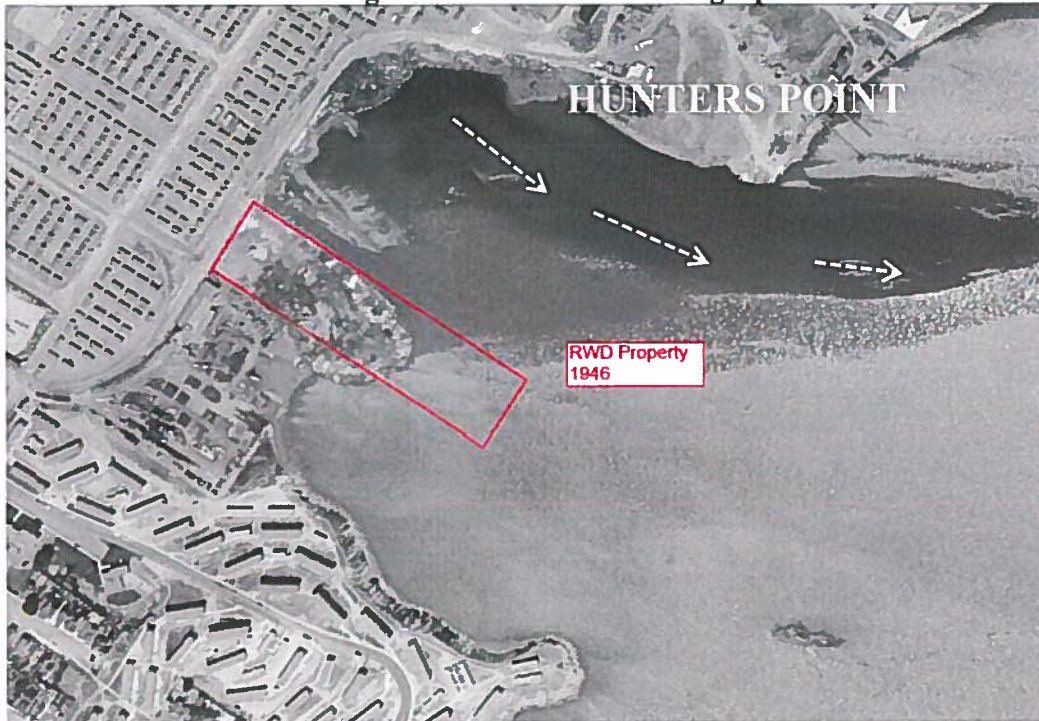
3.2 By 1946: Western Half of Subject Property Infilled

Inset Figure 4 (below) shows an aerial photograph of the Subject Property area taken on July 27, 1946 (obtained from National Archives). This 1946 photograph shows that areas formerly underwater or tidally influenced, in the 1938 photograph (Inset Figure 3), have now been filled in on the western (northwest) portion of the Subject Property. As of 1946, the eastern half of the Subject Property is still located under open water. Extensive new government development, constructed between 1938 and 1946, is evident over the former wetlands northwest of the Subject Property (see Inset Figure 3), and on former privately held lands west and south of the

APPENDIX D HISTORY OF BAY INFILL AND CREATION OF SUBJECT PROPERTY

Subject Property. These government development projects were built by the Navy and the Work Progress Administration (WPA).

Inset Figure 4: 1946 Aerial Photograph



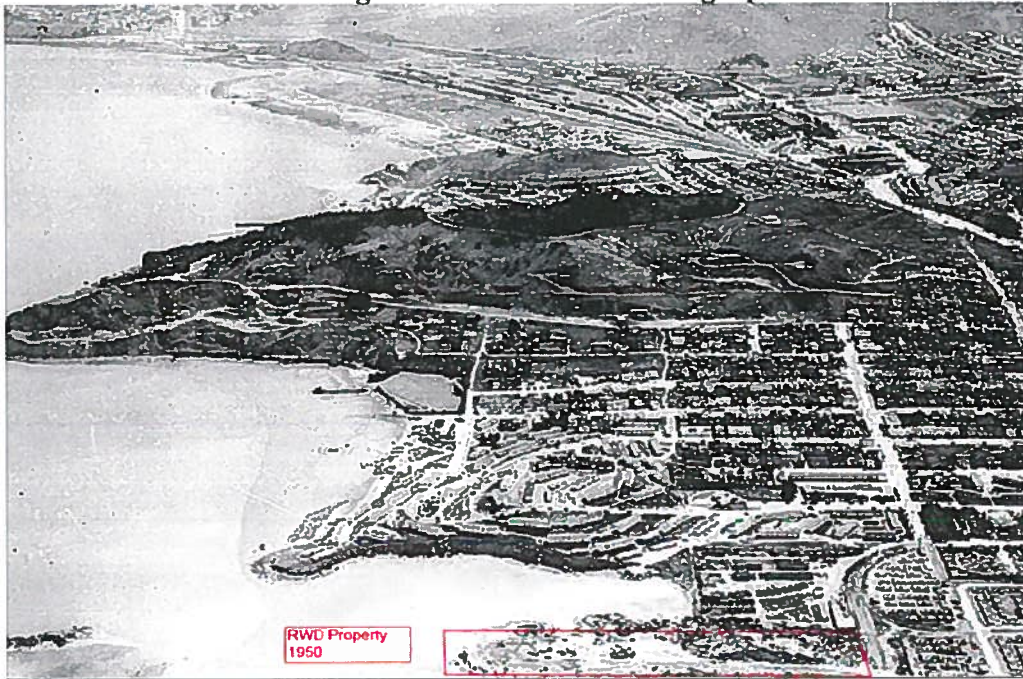
White arrows on Inset Figure 4 show an area where dark-colored water is flowing from an area north of the Subject Property (at the current location of Quesada Avenue and Griffith Street). This dark-colored water, which appears to be a discharge from a darker area near the shore, is spread through the San Francisco Bay all the way to Hunters Point.

3.3 By 1950: Entire Subject Property is Infilled (Except for Far Eastern Boundary)

Inset Figure 5 (below) is a south-facing oblique aerial photograph from 1950 (obtained from the San Francisco Library). This photograph shows that by 1950, fill soil had been placed across almost the entire Subject Property with the exception of the far eastern boundary. The Subject Property, at this time, appears to be almost fully above sea level, and it appears that infill and grading operations are ongoing to bring the area to a flat and level surface.

**APPENDIX D
HISTORY OF BAY INFILL AND
CREATION OF SUBJECT PROPERTY**

Inset Figure 5: 1950 Aerial Photograph



3.4 By 1956 to at least May, 1958: Infill Complete and Partially Developed

Inset Figure 6 (below) is an aerial photo taken on September 1, 1956 (obtained from the National Archives). This 1956 photo shows the Subject Property developed with some of the existing structures and facilities. The warehouse buildings currently located on the Subject Property (see Figure 3), are present on the southern side of the property, adjacent to Armstrong Avenue. Inset Figure 7 shows multiple rows of containerized and/or palletized material in a paved yard north of the buildings on the Subject Property. The properties south of the Subject Property (currently used as stadium overflow parking), and the property southwest of the Subject Property (currently used for container and trailer storage), were also filled-in by 1956. Photography for the proposed Candlestick Park development, dated May 18, 1958 (not shown), reveal the same conditions observed in the 1956 photography. Based on the 1958 photo, it appears that no additional fill placement occurred on the Subject Property margins after September 1956. RK Lumber took possession of the Subject Property in 1954, a year or two prior to Inset Figure 7 (below). Development seen on this photograph is the early use of the Subject Property by the lumber yard operated by RK Lumber.

**APPENDIX D
HISTORY OF BAY INFILL AND
CREATION OF SUBJECT PROPERTY**

Inset Figure 6: 1956 Aerial Photograph



3.5 By July 1958: Subject Property Developed and In Use

Inset Figure 7 (below) is an aerial photograph taken on July 22, 1958 (obtained from the National Archives) showing Subject Property use similar to the 1956 photo in Inset Figure 6. Inset Figure 7 shows that additional infill of the Bay was performed south and southwest of the Subject Property as part of the Candlestick Park construction project. Aerial photography indicates no additional fill placement occurred on the Subject Property after September 1956.

**APPENDIX D
HISTORY OF BAY INFILL AND
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Inset Figure 7: 1958 Aerial Photograph

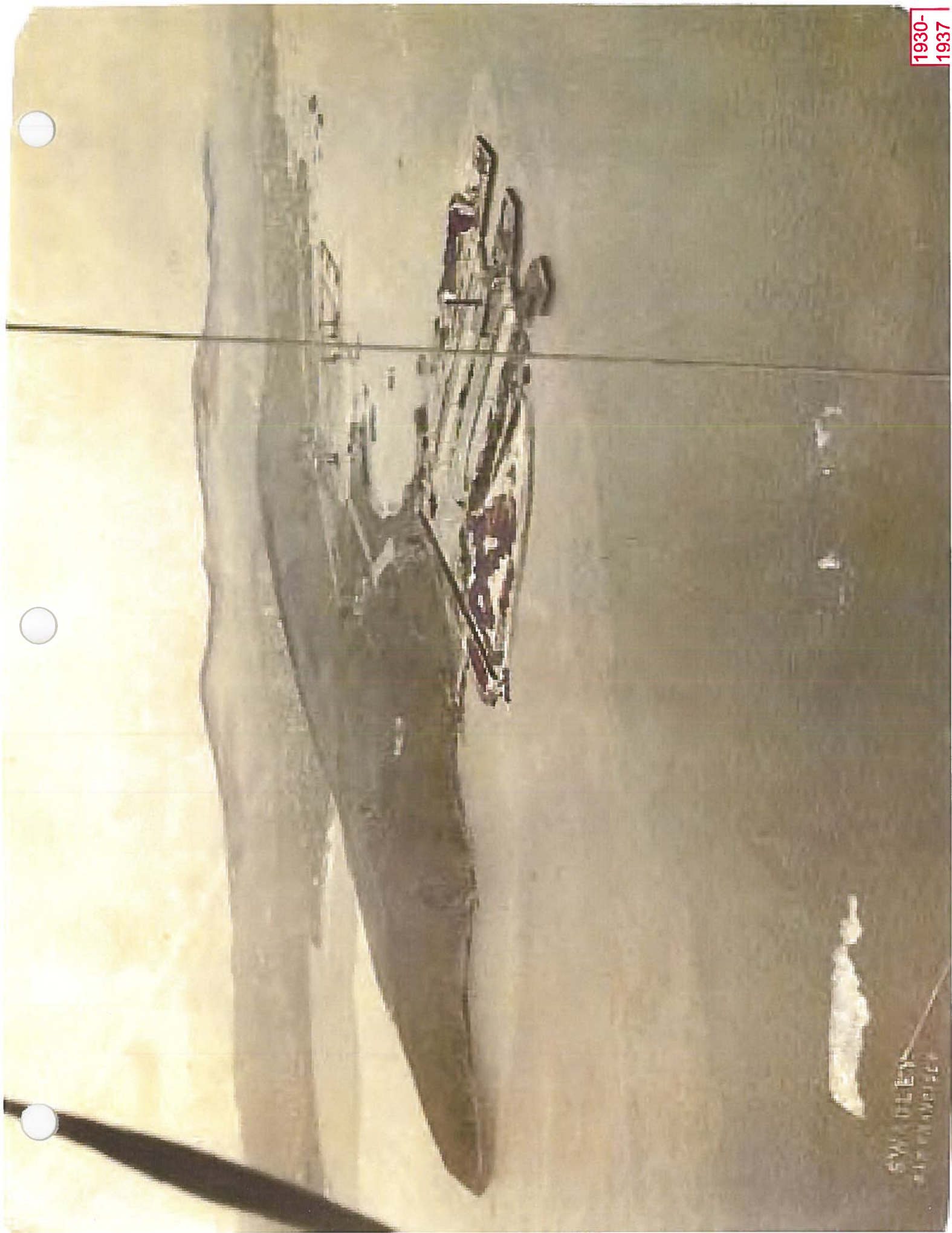


3.6 Photographic Evidence of Discharges to the Yosemite Slough and San Francisco Bay

Waterstone reviewed historical aerial photographs for the Subject Property and nearby coastal lands, including numerous photos taken between 1938 and 1954, procured from multiple public record sources and from the personal files of the RWD owners. Many of these photos show dark-colored waters emanating from specific areas adjacent to the Yosemite Slough and San Francisco Bay into surrounding water (examples are shown in Inset Figures 3 and 4). These dark areas appear to be discharges from storm drains or sewers.

A July 2007 photograph, available on Google Earth, clearly shows a black-colored discharge from Outfall #42 in the South Basin, just east of the Subject Property. Aerial close-ups of other outfall areas, available on Google Earth, also show evidence of discharges darker than clean water still being discharged to the Yosemite Slough. The continuing introduction of contaminants, from outfall points into the Slough, provides an ongoing source of contamination to Slough sediments from fill or any areas that are drained by Yosemite Creek.

1930-
1937



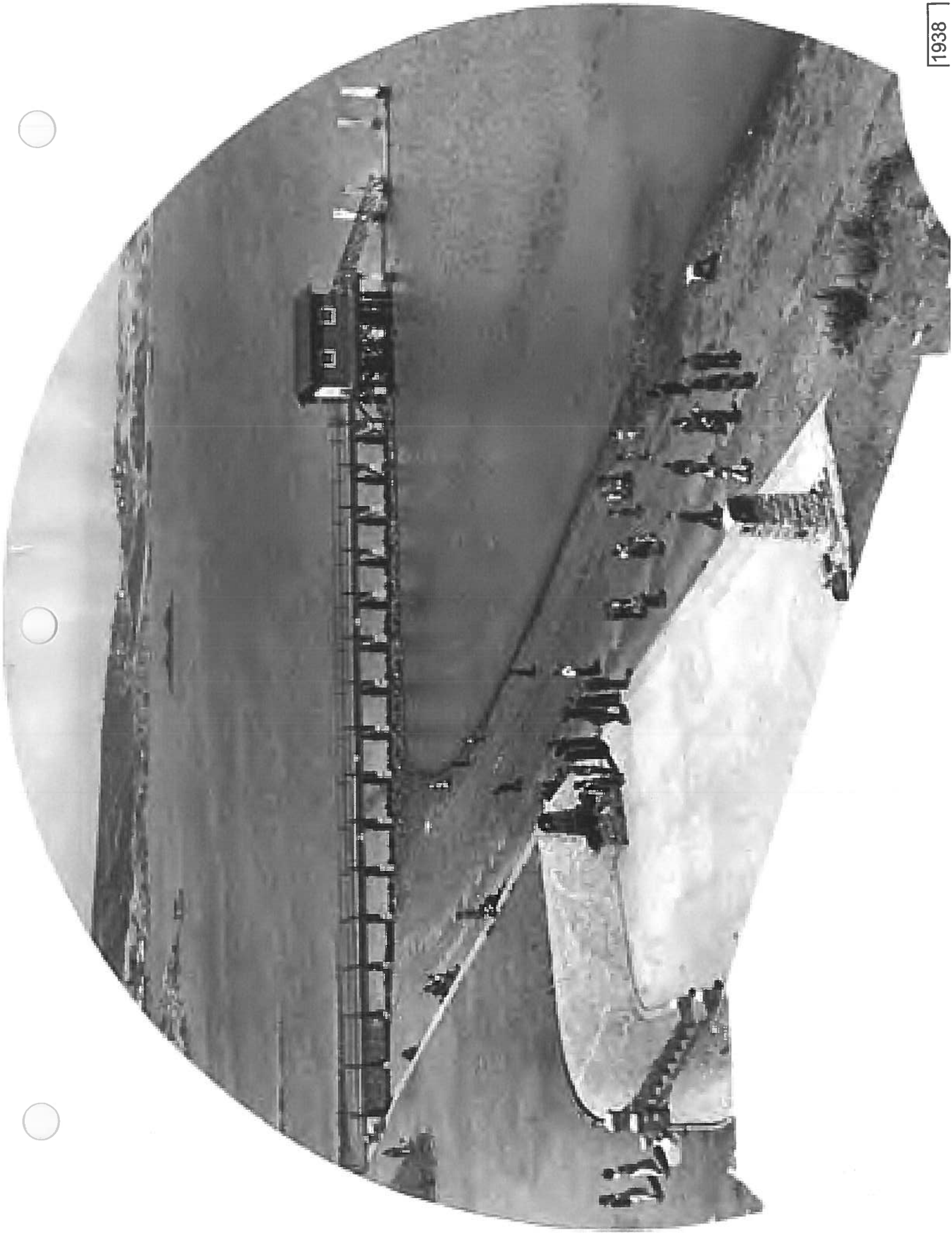
SWIMMING
IN WATER

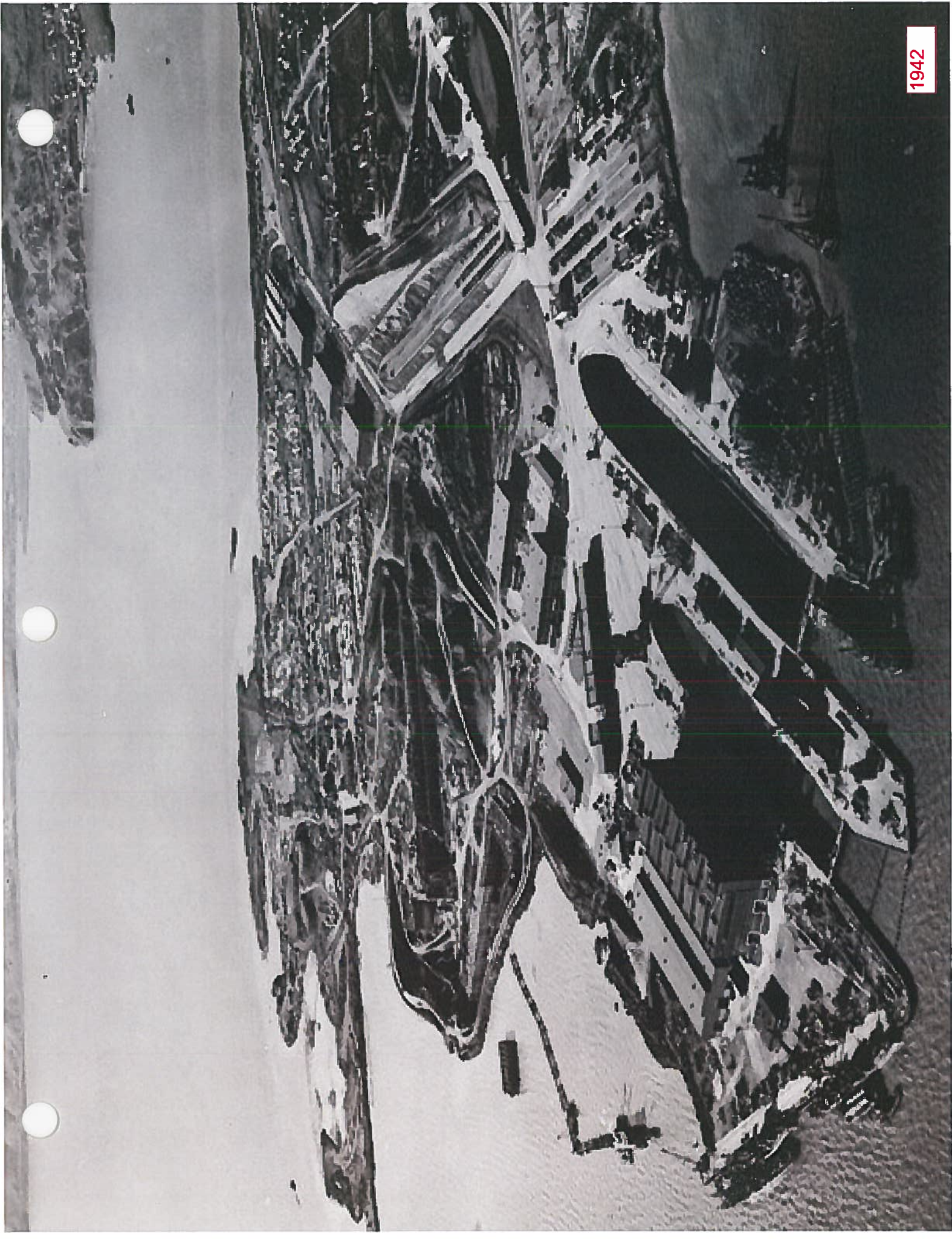
1938











A collection of small, rectangular, light-colored objects, possibly seed pods or dried plant parts, arranged in a grid-like pattern on a dark background.

[illegible]



PHILIPPINES
BATAVIA





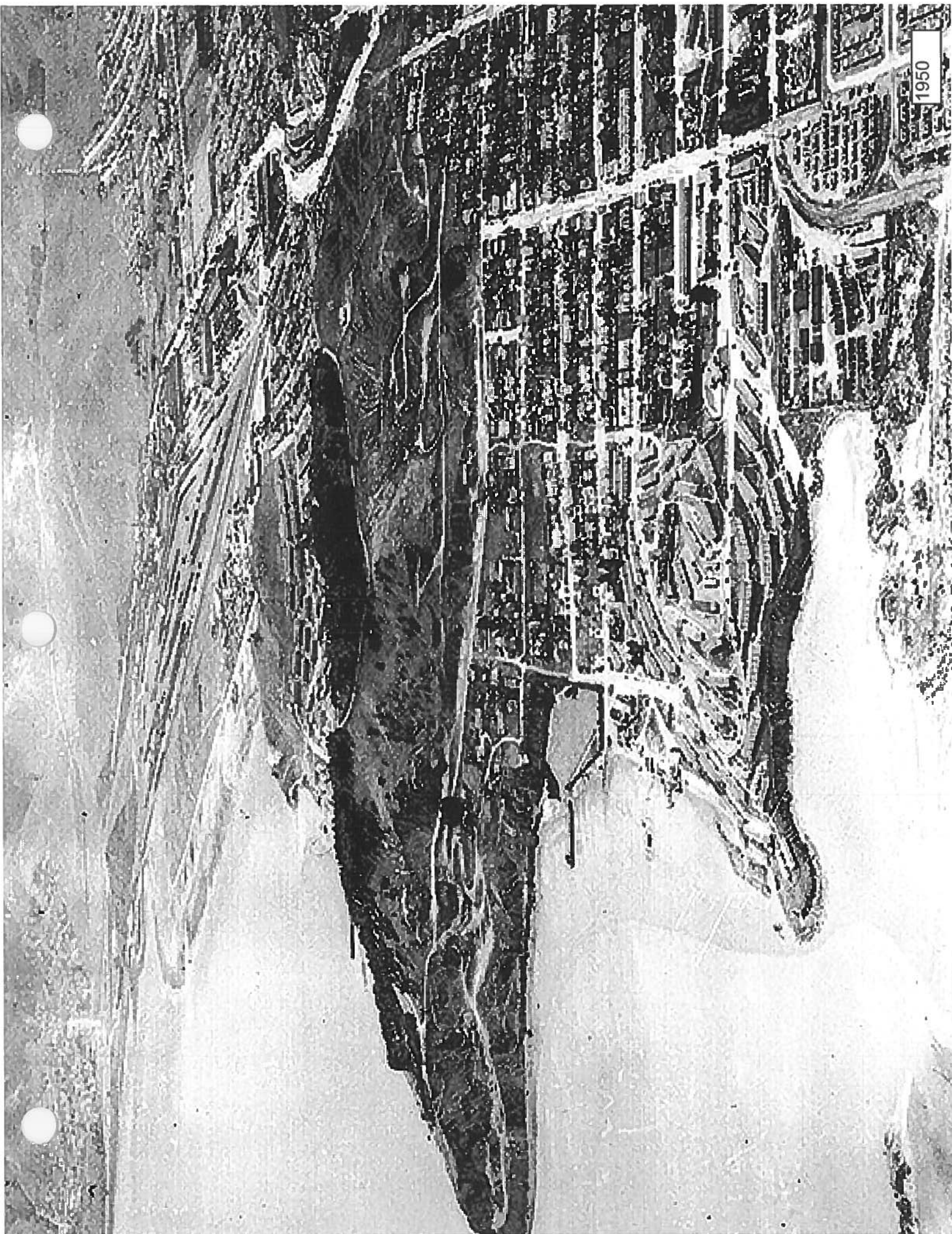




- 87 GS - CP

1946

1950



1956



HUNTERS POINT

THIRD STREET

BAYSHORE



1957

21







1960







Appendix E
Previous Environmental Assessments

APPENDIX E
PREVIOUS ENVIRONMENTAL ASSESSMENTS

4.0 PREVIOUS ENVIRONMENTAL ASSESSMENTS

This section provides a chronological summary of all available environmental reports for the Subject Property, and relevant documents for other properties and Yosemite Slough. Over 100 properties have been named as potentially responsible or responsible parties in the Yosemite Creek Superfund Site. As a result, a large number of environmental investigations have been conducted on the Subject Property, surrounding properties, and Slough sediments.

4.1 Subject Property: USTs Removal and Closure

4.1.1 Harding Lawson Associates (HLA) report dated June 11, 1986

On May 23, 1986, two USTs were excavated from the Subject Property by Harding Lawson Associates (HLA) in a report dated June 11, 1986 (HLA, 1986). The USTs included one 1,000-gallon capacity gasoline UST (Tank 1) located approximately 25 feet northeast of the lumber yard building, and one 2,000-gallon capacity gasoline UST (Tank 2) located approximately 134 feet southeast of the Tank 1.

The HLA report states that Tank 1 was at least 10 years old and reportedly unused for about three years prior to removal. Tank 1 was a single-walled steel tank with no cathodic protection devices or protective outer coating, placed in a concrete cradle or box with brown sand and gravel backfill. Upon removal, the tank showed some scaling and corrosion, with a small hole (less than 1/4-inch diameter) in the tank bottom toward the south end of the tank. Groundwater was present in the tank excavation at about 3.5 feet in depth, and a hydrocarbon sheen was noted on the water surface. Soils surrounding the tank consisted of variable fill that included glass, organic matter, and metal (including an old water heater). A soil sample collected three feet below the excavation floor showed 500 milligrams per kilogram (mg/kg) of Total Petroleum Hydrocarbons as Gasoline (TPH-G), and a water sample collected from the excavation cavity showed 88 milligrams per liter (mg/l) of TPH-G.

Tank 2, which was reportedly installed in 1983, was constructed of tar-wrapped steel. Upon removal, the tank and tar-wrapping appeared to be in good condition. Backfill surrounding the tank consisted of brown sand. Groundwater was encountered in the excavation at a depth of about 5.0 feet below surface grade and exhibited a slight hydrocarbon sheen. A soil sample collected three feet below the excavation floor showed 110 mg/kg of TPH-G, and a groundwater sample from the excavation showed 100 mg/l of TPH-G.

The fill in the area of both tanks contained random construction debris, which may have included hydrocarbon products, used by the Navy as fill and waste materials. HLA concluded that the hydrocarbon in the groundwater may have originated from the fill since Tank 2 had no sign of any leaks yet the soil concentrations detected beneath both tanks and in groundwater in each tank

APPENDIX E PREVIOUS ENVIRONMENTAL ASSESSMENTS

pit were very similar despite that they were located approximately 134 feet away from each other. HLA also stated that no free product was noted.

4.1.2 Gribi Associates: Results of Groundwater Sampling dated December 29, 2006

Gribi Associates conducted a groundwater investigation on September 5, 2006, as a follow up to the tank removal actions (Gribi, 2006). The goal of the investigation was to assess soil and groundwater impacts in the expected downgradient (east) groundwater flow direction from the former USTs. In accordance with the City's Department of Public Health (SFDPH) approved Work Plan, grab groundwater samples were collected from eight soil borings (B-1 through B-8, Figure 3) using temporary 3/4-inch diameter schedule 40 PVC well casings, which were placed from approximately 3 feet to 8 feet in depth. Groundwater was present at an approximate depth of 3.5 feet below grade.

Sample locations and analytical results for this investigation are included in the Gribi Report included in Appendix D. Tables 1a and 1b provide the results of soil analysis and Tables 2a and 2b provide the results for all groundwater analysis for all borings located on and near the Subject Property, as mapped on Figure 8.

Borings B-1 through B-4 were drilled and sampled adjacent to Tank 1. Groundwater laboratory analytical results from the four borings showed minor levels of gasoline-range hydrocarbons (TPH-G) at each boring location, with concentrations of TPH-G ranging from 130 µg/l to 280 µg/l. Concentrations of benzene ranged from 5.5 µg/l to 19 µg/l, and concentrations of MTBE ranged from 5.5 µg/l to 24 µg/l. Toluene was also detected in B-3 and B-4 at concentrations of 1.6 µg/l and 2.4 µg/l. Xylenes were also detected in groundwater samples collected from boring B-4 at a concentration of 2.4 µg/l. The groundwater sample was also analyzed for total dissolved solids (TDS) and contained 580 milligrams per liter (mg/l).

Borings B-5 through B-8 were drilled and sampled in the vicinity of former Tank 2. Groundwater samples from borings B-5, B-6, and B-7 showed minor levels of TPH-G, while the groundwater sample from B-8 did not contain detectable concentrations of any hydrocarbon constituents. TPH-G and benzene were detected in the groundwater samples from B-5 through B-7 at concentrations ranging from 130 µg/l to 1,900 µg/l TPH-G, and 3.0 µg/l to 18 µg/l of benzene. Xylenes were detected in groundwater sampled from borings B-5 and B-6 at concentrations of 7.7 µg/l and 5.6 µg/l, respectively. Toluene was detected in groundwater from B-6 at a concentration of 1.4 µg/l. Ethylbenzene was detected in groundwater sample B-5 at a concentration of 6.1 µg/l. Groundwater sample B-7 was also analyzed for TDS and showed a concentration of 1,900 mg/l.

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Gribi Associates concluded that because the hydrocarbon concentrations were similar, if not higher, in upgradient borings relative to downgradient, the results did not indicate a significant hydrocarbon release from the Subject Property's USTs. The results were also consistent with hydrocarbon levels identified during previous investigations in and around the Subject Property, and are representative of relict hydrocarbon concentrations derived from historic Navy filling activities prior to R&K Lumber's operations. Gribi Associates further concluded that the presence of low-level hydrocarbon impacts in soil and groundwater in and around the Subject Property does not pose a risk for continued commercial/industrial use of the Subject Property. The results of the investigation indicted the presence of low concentrations of hydrocarbon in groundwater throughout the Subject Property vicinity, but no significant hydrocarbon releases from the Subject Property USTs. Accordingly, Gribi Associates recommended that the Subject Property be granted regulatory Subject Property closure.

4.1.3 City of San Francisco: Remedial Action Completion and Certification-Dec. 13, 2006

On December 13, 2006, the City's Department of Public Health issued a Remedial Action Completion Certification confirming completion of the investigation and corrective action for the USTs formerly located at the Subject Property. A copy of this letter is included in Appendix F.

4.2 Subject Property and Vicinity: 1986-1987-Trenching for Sewer Upgrade

In 1986, ERM-West was contracted by the City to complete an investigation for toxic and hazardous wastes along the YFOC project route (ERM-West, 1986). This work was required under the Maher Ordinance, which was passed to ensure that developers of properties within previously landfilled portions of the Bay would complete hazardous waste investigations prior to project construction. During the investigation, waste material was discovered in the Navy fill including many objects and materials previously described in Section 3.3. The investigation was then expanded to include removal and treatment of waste material, and monitoring of excavated areas for compounds that could be hazardous to worker health.

In the vicinity of the Subject Property, the YFOC project included construction of a 66-inch diameter sewer along Armstrong Avenue, and construction of a 17 to 40 foot wide outfall basin along Hawes Street, Yosemite Avenue, and across the Yosemite Slough/Creek. Proposed final elevation for the sewer along Armstrong Avenue was -23 feet (SFCD). In the area of Subject Property, the ERM-West investigation was primarily concentrated along Armstrong Avenue and Hawes Street, with some lesser investigation along Yosemite Avenue. In November 1986, ERM-West collected soil and groundwater samples consisting of seven soil borings along Armstrong Avenue, four soil borings along Hawes Street, two soil borings along Yosemite Avenue, and installation and sampling of three monitoring wells (OW-1, OW-2, and OW-3),

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with two along Armstrong Avenue (OW-1 and OW-2), and one on the Subject Property (OW-3) (ERM-West, 1986, 1987).

According to ERM-West, what appeared to be waste creosote and diesel fuel were found near the intersection of Armstrong and Hawes. Further borings, sampling and analyses were completed to define the extent and better characterize the waste. With this information, a mitigation plan was developed and implemented. The mitigation plan required removal of waste to allow continuation of construction project and proper classification, treatment, and disposal of wastes. Excavation activities associated with the YFOC project exposed considerable construction debris, scrap iron, military hardware, naval rigging and hospital waste. Buried drums, waste oil, and liquid chemical waste were also exposed. A 1945 newspaper clipping, obtained from the excavation area, places an approximate time stamp on fill activities in the area of the contamination. The excavated waste was very similar in nature to the waste buried as Bay fill at the Naval Shipyard.

In 1987, additional follow up investigations were conducted by ERM-West to define the extent of contamination and better characterize the waste. Of the 26 borings drilled, 11 boring locations indicated the presence of elevated concentrations of chemicals of concern. The results of the soil investigation are from a limited number of borings, and evidence of potential contamination in any one sample is for that boring location only.

The borings, where contamination was found to exceed reported regulatory standards, can be grouped into four areas within the proposed sewer alignment (boring locations are shown on Figure 8):

- Area 1- Hawes St. between Thomas and Van Dyke Avenues (Borings 1-5) Off-Subject Property
- Area 2 – Hawes St. and Armstrong Ave (Borings “I”, 7, 7A and 8) Adjacent to Subject Property
- Area 3 – Ingalls St. and Armstrong Ave (Borings “G”, “O”, 9 and 10) Off-Subject Property
- Area 4 – Bancroft Ave, straddling Griffith St. (Borings 11 and 12) Off-Subject Property

4.2.1 Extent of TPH is Defined Approximately 100 Feet from the Slough

In November 1986, ERM-West collected soil and groundwater samples consisting of soil borings along Armstrong Avenue (borings 8, “I”, “U”, “V”, “W”, and “X”), and along Hawes Street, (“C”, “R”, “S”, “Q”, 7a, “T”, “Y”, and “Z”). The study also included the installation and sampling of three observation/extractions wells OW-1, OW-2, and OW-3. These locations are shown on Figure 8. (ERM-West, 1986, 1987).

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According to ERM-West, free product was found during sampling near the intersection of Armstrong and Hawes that they identified (apparently by smell) as creosote and diesel fuel. Figures 8 and 8a show the extent of what ERM-West identified as a “contaminant plume.” The contaminant plume was not found in northerly borings “C”, “R”, and “S” indicating the TPH had not come within approximately 100 feet of the waters of the Slough.

4.2.2 Sampling Results

Tables 1a and 1b provide the results of soil analysis, and Tables 2a and 2b provide the results for all groundwater analysis for all borings located on and near the Subject Property as mapped on Figure 8.

Area 1 – Borings 1, 2, 3, 4, and 5 (off-Subject Property)

This area is not in close proximity to the Subject Property. All listed borings are outside the area in and near the Subject Property mapped in Figure 8. In several soil samples collected from borings in Area 1, high metal concentrations (copper, lead, and nickel) that exceed Title 22 limits, as well as some detectable concentrations of volatile organics (PCE, TCE, Chloroform, and 1,2-DCE), were detected. Groundwater was not encountered in borings 1, 2, and 3 because the area is underlain with a fractured rock formation preventing drilling.

ERM-West concluded that compounds detected at elevated levels in soil may be found in the groundwater in the area where concentrations exceeded regulatory requirements. Detectable levels of cyanide were also evident in samples from borings 2 and 4. According to ERM-West, the origin of cyanide compound was reported to be unknown.

Area 2 – Borings “I”, 7, 7A, and 8 (Adjacent to Subject Property)

These borings are shown on Figure 8. Samples from these borings indicated some elevated concentrations of metals (copper, zinc, nickel, lead) in the soil. Groundwater contained detectable concentrations of purgeable aromatics (benzene, toluene, and xylenes).

In boring 7, located near the intersection of Armstrong and Hawes, a black-colored product described as “aromatic” due to its odor was found floating on the ground water. The product smelled like tar and was assumed by ERM-West to be creosote or some derivative of wood treatment. Soil samples containing this material from borings 7 and 8 (depths were not reported) were analyzed for creosote and pentachlorophenol and analytical results indicated that these chemicals were not detected above a detection limit of 10 mg/kg.

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Elevated levels of TPH, benzene, toluene, and xylene (BTX) were detected in the groundwater. The water samples from boring 7A were analyzed and found to contain elevated levels of polycyclic aromatic hydrocarbons (PAHs). The concentration levels of the chemicals detected are shown in Tables 1a and 1b for soil, and Table 2a and 2b for groundwater. Soil samples collected from borings 7 and 8 were composited for each boring, and analyzed for polychlorinated biphenyls (PCBs).

Soil samples collected from borings 7 and 8 were composited for each boring, and analyzed for polychlorinated biphenyls (PCBs). PCBs were not detected in any of the soil or groundwater samples collected during ERM-West's investigation. This is significant since borings 7 and 8 are within 60-75 feet of OW-3 (see Section 4.3), which reportedly had product floating on the groundwater that was subsequently analyzed and resulted in a low level PCB concentration of 3.7 mg/kg.

Based on preliminary investigations, the extent of PAHs contamination in groundwater appeared to be limited to an area around boring 7A of 250 by 250 feet (see Figure 8). The area of greatest contamination appeared to be near observation well OW-3.

Area 3 – Borings “G”, “O”, 9 and 10 (off-Subject Property)

Evidence of purgeable aromatic compounds (benzene, toluene, etc.) was found in the groundwater. ERM-West indicated that a leaking diesel fuel tank, to the north of Ingalls Street, may be the origin of the contamination. It appears that the contamination may have occurred following the porous backfill of the sewer in the center of Ingalls Street. Detectable levels of cyanide were also found in a soil sample from boring 10. As with Area 1, the origin of this compound was reported to be unknown.

Area 4 – Borings 11 and 12 (off-Subject Property)

Lead and nickel levels were detected in soil samples which may indicate concentrations in excess of Title 22 standards. The concentrations did not exceed regulatory threshold limits established by the Total Threshold Limit Concentration (TTLC), however, the concentrations noted in Tables 1a and 1b did exceed the common screening level used for determination of elevated concentrations (ten times the Soluble Threshold Limit Concentration (STLC)).

4.2.1 Petroleum Hydrocarbon Water and Product Removal by the City in Area 2

Free product that was assumed by ERM-West to be the petroleum hydrocarbons creosote and diesel fuel, was observed floating on the groundwater in the vicinity of Armstrong Avenue and Hawes Street. A Subject Property mitigation plan was subsequently prepared for Area 2 before

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proceeding with the City's planned sewer installation. Subject Property mitigation included the extraction of free product via dewatering during construction activities with separation of any free product extracted. Some of the contaminated soil was also segregated and disposed of offsite, with the less impacted soil used for backfill of the sewer trenches on the project.

ERM-West installed three four-inch diameter extraction wells (OW-1, OW-2, and OW-3; Figure 8) to extract free product and water during the sewer line installation activities. ERM-West constructed an area called a treatment facility to begin extraction of free product via dewatering the area, allowing the pumping and collection of water and free product from wells OW-1, OW-2, and OW-3. The treatment facility was located along Armstrong Avenue near the intersection of Hawes Street.

The treatment facility was not described in any ERM-West reports but was described in Mr. Mullinnix's deposition testimony on September 14, 1993. (Steve Mullinnix, 1993). Mr. Mullinnix's deposition was taken as part of the earlier litigation between RWD and the City. It is Waterstone's understanding that this information was not previously available to EPA or the PRP Group attorney since the deposition was obtained in 1993 as part of a lawsuit between Reginald Ricci, Anita Ricci, Buckeye Properties, A Partnership vs. Homer J. Olsen, Inc., A Corporation, City and County of San Francisco, DOES 1-50, inclusive regarding another matter.

Mr. Mullinnix, as the City employee onsite during the YFOC project, described aspects of his observations of the YFOC in detail. Relevant excerpts of Mr. Mullinnix's testimony are included in Appendix A-1. In his deposition testimony, Mr. Mullinnix described an area used to separate and store segregated free product, water and waste soil. This temporary treatment facility appeared to consist of two Baker tanks, a plastic-lined area to receive soil, and a drum storage area.

Separation was accomplished by pumping to either of the two Baker tanks, which were open top tanks used to allow the product to separate from the pumped fluid. According to Mr. Mullinnix, the Baker tanks were 4,200 gallons each, and a French drain/trench was installed along Armstrong between the wells to enhance recovery from the wells. The French drain was a trench backfilled with gravel to a depth of approx. 15 feet. Mr. Mullinnix did not indicate how much fluid was recovered, or product, however it was a considerable effort and it is believed that the free product was recovered to the extent practicable and only residual concentrations of product remained, much of which was removed along with the 6,000 cubic yards of impacted soil that was excavated from beneath the City streets.

Product was skimmed from the top of the tanks and placed in 55-gallon drums. The product was shipped for disposal off-site at an incineration facility. The treated water was then discharged to the sewer system which was monitored by the Industrial Waste Division staff. The discharged water received further treatment at the Southeast Treatment Plant operated by the City.

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The three small pumps used to extract the fluids at OW-1, OW-2, and OW-3 frequently clogged. They were replaced with two large pumps, and extraction continued in the area of OW-2 and OW-3. The goal was reportedly to remove the product as quickly and completely as possible so that the construction project would not be delayed. OW-3 was reportedly inadvertently placed on the RWD property by ERM-West due to some confusion over the fencing and property lines.

Areas of apparent soil impacts were excavated and materials were temporarily stored in a controlled area (treatment facility) on the southerly corner of Armstrong Avenue and Hawes Street. The area was bermed and lined with two layers of plastic liner. After drying, the material was transferred to another area on the job site. Material was then sorted and debris was removed for separate disposal. Soil was stockpiled, dried, and mixed, and treatment was reportedly accomplished by this method. The goal of 10 mg/kg carcinogenic PAH's and 100 mg/kg of TPH were reportedly met on all soil, except 126 cubic yards which was hauled to a Class I landfill in Casmalia, CA.

4.2.2 RWD Notification of EPA Following Observed Contamination During Sewer Upgrade

RWD notified the EPA following discovery of free product in well OW-3 during the City's sewer project on the Subject Property, which prompted the first of the three EPA site investigations and evaluations.

4.3 Subject Property: Product Sample from OW-3- June 1989

As a follow-up to the ERM-West findings of contamination on the Subject Property, Buckeye Properties retained L&W Environmental (L&W) in June 1989, to collect a sample of liquid from well OW-3 located on the Subject Property (see Figure 8). L&W, who was not involved in the sewer upgrade project, did not know that the well had been referenced previously as "OW-3" and simply labeled the sample as "MW-1 Monitor Well".

While RWD provided the laboratory report for this sample to EPA in its April 2013 submittal (see Appendix B), laboratory analysis data sheet packages at that time did not include a copy of the chain-of-custody (COC). A COC is a form that travels with the samples to the lab and provides details about the type of sample collected, the date sampled, and documents the parties that had custody of the sample until it was received at the laboratory. Waterstone procured a copy of the COC from RWD files. It appears the COC was never requested or reviewed by EPA, its contractor, or the PRP Group.

In the COC, L&W identifies the sample it collected as "100% pure product." L&W submitted the free product sample to Precision Analytical Laboratory, Inc. L&W did not prepare a report describing this sampling event, however, the COC and lab results are included in Appendix A-2.

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The product sample was analyzed for PCBs, halogenated hydrocarbons, and metals. According to the laboratory analysis data sheets, the following results were reported:

- PCBs were detected at 3.7 mg/kg with a detection limit of 0.5 mg/kg,
- halogenated hydrocarbons were not detected above the laboratory reporting limit of 1.0 mg/kg, and
- metals detected included antimony, zinc, lead, cobalt, copper, nickel, chromium, vanadium, copper, and barium.

4.4 Subject Property: March 20, 1990 - Phase I Environmental Assessment

Christopher M. French, R.G., was retained by Amen, Keith & Berg to prepare a Phase I Report for the Subject Property in the vicinity of the YFOC, to determine the nature and source of contaminants, as a follow-up to the 1986 ERM-West work (Christopher M. French, R.G., 1990). The scope of work included compilation and evaluation of findings pertaining to the physical setting, contaminant source verification, hazardous waste characterization, and risk assessment for the properties in the area of the YFOC project.

The Phase I Report indicated that the Subject Property was underlain by artificial fill, younger Bay mud, and Bay side sand to the depth explored by geotechnical investigations. Groundwater was located at less than three to five feet beneath the Subject Property. A substantial portion of the Subject Property appeared to have been located bay ward of the line of mean high tide prior to 1942. The Navy condemned and took possession of the lands adjacent to the Subject property for the purposes of constructing a railroad to the Hunters Point Naval Shipyard in 1942. Public access bay ward of the railroad, including the Subject Property, was restricted and not allowed during the 1940s and early 1950s. (Section 2.2) Review of aerial photographs from 1939-1957 indicate that the portion of the Subject Property underlain by contamination emerged from the Bay prior to 1948. It was characterized by a shallow depression, which appeared to have been filled with debris and may have contained ponded liquid. Between 1951 and 1953, the area of contamination was subject to final fill and grading operations.

According to the Phase I Report, excavation activities associated with the YFOC project exposed considerable construction debris, scrap iron, military hardware, naval rigging, hospital waste, buried drums, waste oil, and liquid chemical waste. A 1944 newspaper clipping obtained from the excavation area placed an approximate time stamp on fill activities in the area. French surmised a qualitative association can be drawn between waste discovered in the YFOC project area and similar wastes identified in areas currently subject to environmental cleanup at Hunters Point Naval Shipyard Superfund Subject Property.

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Subsurface investigation of soil and groundwater performed by ERM-West indicated that a large area of floating product was located under a portion of the Subject Property; potentially elevated concentrations of metals, chlorinated aliphatic hydrocarbons (1,1 and 1,2-dichloroethylene), PAHs, waste oil, and benzene may be present beneath the property. PCBs were not detected in any of the soil or groundwater samples collected adjacent to or from the Subject Property. Photographic evidence suggested that the construction activities associated with the YFOC project may have contributed to the release and/or migration of contaminants into the subsurface adjacent to the property, in addition the porous backfill of the sewer and outfall basin may provide a conduit for subsurface transport along its extent. A preliminary assessment of risk was performed which indicated that a low probability of risk to the environment or human health may exist, provided that a substantial route of exposure was not present. The risk assessment was reportedly subject to considerable uncertainty due to the paucity of available and reproducible data.

4.5 Adjacent Property – 1313 Armstrong Avenue - Soil Sampling Activities

Baseline Environmental Consulting prepared a "Report on Site Characterization" dated December 1987 for a neighboring adjacent property occupied by E.S Brush and Sons Lumber located at 1313 Armstrong Avenue (Baseline Environmental Consulting, 1987). This property was reportedly formerly owned by A.D. Schraeder and used for rail-related activities until 1960 when it became a lumber yard. The purpose of the characterization was to identify the past land uses on the property and whether these uses could have impacted the subsurface.

The Characterization consisted of 10 soil borings (borings 1-10, Figure 8) to an approximate depth of 6.5 feet below grade. Two soil samples were collected, composited by the laboratory, and analyzed from each boring. TPH concentrations ranging from 83 to 180 ppm were detected in three (borings 2, 4, and 5) of the ten locations sampled, total PAH concentrations ranged from <0.1 to 2.2 ppm and were only detected in one soil sample (boring 1). Creosote concentrations were not detected. Groundwater was encountered at a depth of 5 to 6.5 feet and no floating product or petroleum sheen was identified on the groundwater. Unrelated to this assessment, an underground storage tank was previously removed from the this same property and an unauthorized release was detected during closure activities. A monitoring well was installed and sampled however BTEX was reportedly not detected in the groundwater sample collected from the well.

The soil sampling activities conducted on this property indicate that the TPH concentrations and free product detected in Armstrong Avenue near the intersection of Hawes Street are delineated to the south and they do not appear to extend any appreciable distance south of Armstrong Avenue (Figure 8).

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4.6 Subject Property: 1990 - EPA CERCLA Preliminary Assessment

RWD notified the EPA following ERM-West's 1986 discovery of contamination on the Subject Property. This notification prompted the first of the three EPA site investigations and evaluations on the Subject Property.

On December 7, 1990, a CERCLA Preliminary Assessment report was issued for the Subject Property by E&E, on behalf of the EPA (E&E, 1990).

4.6.1 Conclusions

The EPA conclusions included in this CERCLA Preliminary Assessment were dependent on the level of contamination that was documented for the Subject Property including:

Table 1
Highest Levels of Contaminants Detected in Groundwater
at the Buckeye Properties Site

<u>Contaminant</u>	<u>Concentration (µg/L)</u>	<u>Maximum Contaminant Level (MCL)(µg/L)</u>
benzene	800	1*
toluene	140	100**
ethylbenzene	1000	680*
xylene	1200	1750*
1,1-dichloroethylene	<0.5 - 200	6*
Polychlorinated biphenyls (PCBs)	3700	0.5***

*MCLs taken from California Code of Regulations Title 22 (April 1989)

**State Action Level recommended by the California Department of Health Services (April 1989)

***MCL taken from U.S. Environmental Protection Agency (June 1989)

However it should be noted that the 3,700 µg/L reported above for PCBs which are compared to a water MCL of 0.5 µg/L are an improper representation of the data obtained from the Subject Property (the result was actually 3.7 mg/kg of PCBs in a product sample) and compared to a regulatory standard for the wrong media (water not product).

The report concludes:

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In 1986, sampling performed by consultants in conjunction with the construction of a sewer project at the site revealed contamination in groundwater and soil. Laboratory analysis revealed the presence of polycyclic aromatic hydrocarbons, halogenated hydrocarbons, aromatic hydrocarbons, heavy metals, and polychlorinated biphenyls.

The following are significant Hazard Ranking System Factors associated with Buckeye Properties:

- o There is observed soil and groundwater contamination on site,
- o Cadmium has a high toxicity and high persistence in the environment,
- o There is a large commercial fishery located in San Francisco Bay,
- o There are several sensitive environments, including federally protected species, located in San Francisco Bay, and
- o There is an on-site trailer residence, as well as a large residential population within 1 mile of the site.

The site recommendations were to perform a "Higher Priority SSI (Statistically Significant Increase) Report under CERCLA."

4.6.2 Details of 1990 CERCLA Preliminary Assessment

E&E reports that contamination was encountered beneath Armstrong Avenue in 1986 in conjunction with a sewer project at the Subject Property area by the City of San Francisco Department of Public Works (SFDPW) consultant, ERM-West. ERM-West subsequently conducted various investigations to assess soil and groundwater impacts. These investigations identified primarily heavy-range hydrocarbon soil and groundwater impacts near the intersection of Armstrong Avenue and Hawes Street. According to E&E, several CERCLA hazardous substances, including PCBs and cadmium, were found to exist in groundwater and soil, consisting of 3.7 mg/kg PCBs as Aroclor 1260 in monitoring well MW-1; 800 parts per billion (ppb) benzene and 1,200 ppb xylene in groundwater sample 7A; and 680 ppm total petroleum hydrocarbons, 12 ppm cadmium, and 230 ppm lead in soil boring 7A. The contamination problem was reported in September 1989 to the Enforcement Section of the EPA by an attorney for the Subject Property.

Subject Property inspections and interviews by E&E on behalf of the EPA did not indicate that any of the Subject Property occupants had contributed to any of the soil or groundwater impacts

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identified at the Subject Property. E&E concluded that the landfill area created by the Navy appeared to be a source of potentially uncontained hazardous substances and ranked the Subject Property a Higher-Priority SSI Under CERCLA.

4.7 Subject Property: July 15, 1991 - EPA CERCLA Preliminary Reassessment

This July 15, 1991 report was prepared by E&E on behalf of the EPA and is a re-assessment of the work completed in 1990 by E&E with some additional follow-up inspections and interviews (E&E, 1991).

Summary of Hazard Ranking System (HRS) considerations were reported as follows:

- The potential for documenting an observed release of contaminants from the Subject Property to surface water appears to be high.
- The contaminants of concern have high toxicities.
- Actual contamination of a fishery in the South Basin Canal, which is adjacent to the Subject Property, may have occurred; and
- Contaminated groundwater below the Subject Property may be under tidal influence with San Francisco Bay.

E&E reported the following conclusions on behalf of the EPA:

- Subject Property inspections and interviews did not indicate that the Subject Property occupants had contributed to any of the soil or groundwater impacts identified at the Subject Property.
- E&E concluded that the Navy landfill area identified beneath Armstrong Avenue and Hawes Street appears to be a source of potentially uncontained hazardous substances and re-ranked the Subject Property a Lower-Priority for Further Subject Property Assessment.

4.8 Subject Property: June 14, 1993-US EPA CERCLA Site Inspection Report

On June 14, 1993, a CERCLA Subject Property Inspection Report was issued for the Subject Property by E&E on behalf of EPA (E&E, 1993). The Subject Property inspection did not include any sampling, but rather summarized and evaluated previous investigative results and potential human health and environmental risks. Summary tables included in this report showed variable concentrations of hydrocarbons and metals, in soils and groundwater, along both sides of South Basin Inlet. When examining the relative potential exposure to soil contamination identified beneath the Subject Property, the report states "Metals and hydrocarbons

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contamination at the Subject Property is primarily limited to the subsurface. The Subject Property is fenced and partially paved. There are several businesses on the Subject Property but no residences. The surrounding area is primarily light industrial, and the nearest residences are about 1,000 feet north of the Subject Property".

This report includes a similar Subject Property history summary as is included in previous documents. Some key additional historical information includes: RK Lumber originally occupied the southeast half of the Subject Property; Julio Ricci apparently purchased the northwest Subject Property parcels in the mid-1960s and expanded the lumber yard. At the time of the Site Inspection report, Subject Property tenants included Ranger Pipeline, City Debris, and a cabinet shop. City Debris apparently received construction debris for wood reclamation, sorted and chipped the wood portions, and shipped the materials offsite.

During the excavation of contaminated fill for the YFOC project, it was noted from photos that: 1) visual contamination was not present in the upper two feet of soil beneath the Subject Property; and 2) it is likely that downward migration of contamination is impeded by Bay muds, which are present at about 15 feet in depth. Although the lateral extent of contamination was not determined, the report notes that "contamination of fill is widespread in San Francisco" (page 5-1). Some of the waste materials were removed during the YFOC project. Analysis of the waste indicated the following hydrocarbon constituents and concentrations: 5,400 mg/kg of Acenaphthylene; 4,100 mg/kg of Flouranthene; 48,000 mg/kg of Napthalene; 11,000 mg/kg of Phenanthrene; and 470,000 mg/kg of TPH. No detectable concentrations of PCBs were present. According to E&E, boring BH6 was drilled immediately east in an expected downgradient groundwater flow direction from the Subject Property's former 1,000- gallon gasoline UST. The soil sample collected from this boring showed no detectable concentrations of TPH/BTEX constituents and only background concentrations of metals.

Subject Property inspections and interviews did not indicate that the Subject Property occupants had contributed to any of the soil or groundwater impacts identified at the Subject Property. In addition, this report concludes that the Subject Property "does not qualify for future remedial Subject Property assessment under CERCLA". This decision was based on: (1) hydrocarbons and metals contamination is widespread in Bay fill materials and sediments, and contaminants beneath the Subject Property have not been associated with known onsite activities; (2) groundwater use is limited in the Subject Property vicinity, and the Subject Property is fenced and paved; and (3) although sediments in Yosemite Slough/Creek are contaminated, this contamination cannot be attributed to the Subject Property since there are numerous potential offsite sources.

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4.9 Subject Property: June 21, 2007 - Phase I Environmental Site Assessment

Gribi Associates completed a Phase I Environmental Site Assessment (ESA) for the Subject Property and documented the results in a report dated June 21, 2007 (Gribi, 2007). The purpose of the Phase I ESA was to identify potential chemical contamination sources or practices (recognized environmental conditions or RECs) conducted on or near the Subject Property that could adversely impact the Subject Property's environmental conditions.

The ESA discussed the former USTs that had been studied and closed by the City. The ESA concluded that the only recognized environmental condition relative to current Subject Property conditions was related to waste oil storage in the maintenance shed at Higgins Construction, located at 1295 Yosemite Avenue.

During the Subject Property reconnaissance, some dark staining of soils was noted in this area, indicating a possible release of waste oil to the ground surface. Although waste oil and small volumes of other vehicle maintenance and chemicals were stored on some of the parcels (Ranger Pipelines, Alpine Construction, Shaw Pipeline, Multeen Transport, Handy Dan, and Scene 2), chemical handling practices appeared to be adequate. No significant staining on the ground surface in these areas of the Subject Property were noted during the reconnaissance. Gribi concluded that no current or post 1954 business activities on the Subject Property, or in the Subject Property vicinity, were expected to have significantly impacted environmental conditions on the Subject Property.

4.10 Yosemite Slough Sediments: 1995-2012 Evaluation of Contamination

Since the 1990s, several investigations of Yosemite Slough sediments have been conducted at locations adjacent to and/or near the Subject Property including:

- 1995 Regional Water Quality Control Board (RWQCB) Study – Sediments at the Slough were investigated in December 1995 under the Bay Protection and Toxic Cleanup Program (BPTCP), *Proposed Regional Toxic Hot Spot Cleanup Plan* (RWQCB 1997).
- 1996 Navy Study of Hunters Point Naval Shipyard (the Naval Shipyard) Parcel F – As part of the Navy's ongoing CERCLA remedial activities at the Naval Shipyard, a remedial investigation and feasibility study was performed in 1996 at Parcel F, the portion of the Naval Shipyard that includes the South Basin. Sediment samples were collected in the South Basin and in limited number from the far eastern portion of the Slough.

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- 1999 SFPUC Study – *Sediment Investigation at Yosemite Creek* report by Arthur D. Little, Inc., dated May 1999 (Arthur D. Little, Inc., 1999). This report presents the results of sediment investigation at the Subject Property conducted from March 1998 through May 1999. The purpose of this report was to document the results of sediment investigation to assess the potential contamination and associated toxicity of surficial sediments of Yosemite Slough.
- 2004 SFPUC Study – *Sediment Investigation at Yosemite Creek* report by Battelle dated May 5, 2004 (Battelle, 2004). Additional investigation and sampling of the Slough was performed under the direction of the SFPUC in October 1998, October 1999, and April 2000. This investigation included the collection of surface and subsurface sediment samples up to 4 feet below ground surface, as well as bioassays and bioaccumulation in clam tissue.
- 2005 Hydrodynamic Study – *Hydrodynamic Modeling, Wave Analysis and Sediment Evaluation* report by Noble Consultants, Inc. dated September 2005. Field data, including a bathymetric survey, hydrologic data collection, and surface sediment collection, were used to predict sediment dynamics for the Slough, South Basin, and wetland restoration areas.
- 2009 EPA Study – *Yosemite Creek Sediment Removal Assessment Report dated May 2011 and Estimation of Aroclor 1254 and Aroclor 1260 Using PCB Congener Data in Yosemite Slough Sediment Sample Data from Yosemite Creek Sediment Removal Assessment Report dated June 2012* (E&E, 2011, 2012). Between June 17 and July 9, 2009, EPA's consultant E&E, assisted the EPA with the collection of 191 sediment samples from 36 sampling locations at the Slough.
- EPA Additional Technical Studies 2011-2012 – In 2011-2012, EPA (in conjunction with several potentially responsible parties), undertook three technical studies to address data gaps in order to prepare a *Working Draft Engineering Evaluation/Cost Analysis* (EE/CA) dated April 2013 (E&E, 2013). These studies included:
 - *Waste Classification Study* by EPA on February 21, 2012, which included a total of 32 samples from eight sample locations (E&E, 2012);
 - *Geotechnical Study* between March 15 and March 23, 2012 by ARCADIS which included six geotechnical borings were drilled to depths ranging from 36 to 87 feet below sediment surface;
 - *Sediment Dewatering Treatability Study* which was conducted by NewFields LLC, a consultant to the City, to support the development of the Engineering Evaluation/Cost Assessment (EE/CA).

The purpose of these assessments was to support the EPA's Superfund Remedial Program for planned removal actions that are not time critical for contaminated sediment in the Yosemite Slough (USEPA, 2011).

APPENDIX E PREVIOUS ENVIRONMENTAL ASSESSMENTS

The *Waste Classification Study* concluded that PCBs were not observed at concentrations exceeding the Toxic Substances Control Act (TSCA) regulatory limit of 50 mg/kg for total PCBs as a sum of Aroclors in any sample from the study, which indicated that the sediments are unlikely to be TSCA-regulated waste for purposes of disposal. Test results for soluble metals and total metals indicated that both lead and chromium were present in Yosemite Slough sediments at concentrations that would classify waste materials as non- RCRA waste.

Numerous assessments have been performed in the upper 5 feet of sediment within Yosemite Creek/Slough and the surrounding tidal area. During low tide, sediments are exposed within the Slough. Site assessments performed within the Slough indicated that sediments are impacted with PCBs; metals including cadmium, chromium, copper, lead, mercury, silver, and zinc; total petroleum hydrocarbons as diesel and motor oil; and pesticides including aldrin, chlordanes, dieldrin, and dichloro-diphenyl-trichloroethanes (DDTs), and heptachlor. These past investigations have indicated that elevated concentrations of PCBs are present throughout the sediment column to a depth of up to 5 feet, however concentrations at depth are less bioavailable for exposure to potential receptors. The main species of PCBs detected were Aroclor 1254 (12 carbon atoms 54% chlorine by mass) and Aroclor 1260 (12 carbon atoms 60% chlorine by mass), which were reportedly used in electrical equipment manufacturing primarily before 1950.

Final chemicals of concern which require remedial action were identified by EPA as including lead and PCBs. Subject Property remedial goals (RGs) for PCBs were determined to be 1,240 µg/kg or less at a given location and an overall area-weighted average site wide, must be 386 µg/kg, and lead concentrations of 436 mg/kg or less at a given location and overall area-weighted average of 218 mg/kg or less. Maximum concentrations of total PCBs (Aroclors) detected were as high as 130,000 µg/kg and 34,900 µg/kg for total PCBs (18 congeners). PCBs appeared to be distributed the most extensively, with exceedances of the RG occurring throughout the top 2 feet of sediments within Yosemite Slough. The distribution of lead concentrations exceeding RGs was similar to the distribution of PCBs and, therefore, removals to address PCBs will also address lead. Tables and Figures summarizing the analytical results and sample locations for the sediment studies conducted in Yosemite Slough from the EE/CC report are included in Appendix H for reference.

Appendix F
Text, Tables and Figures – Gribi Assoc. Groundwater
Sampling Report, December 29, 2006 and Agency UST
Closure Letter



City and County of San Francisco
DEPARTMENT OF PUBLIC HEALTH

Govin Newsom, Mayor
Mitchell H. Katz, M.D.
Director of Health

OCCUPATIONAL & ENVIRONMENTAL HEALTH

REMEDIAL ACTION COMPLETION CERTIFICATION

December 13, 2006

RWD Associates, LLC
c/o Reginald Ricci
433 Corte Madera Town Center, #626
Corte Madera, California 94925

Subject: Underground Storage Tank (UST) Case
Former Ricci & Kruse Lumber Company
1295 Yosemite Avenue, San Francisco
LOP Case Number: 11741

Dear Mr. Ricci:

This letter confirms the completion of a site investigation and corrective action for the underground storage tank(s) formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, this agency finds that the site investigation and corrective action carried out at your underground storage tank(s) site is in compliance with the requirements of subdivisions (a) and (b) of Section 25299.37 of the Health and Safety Code and with corrective action regulations adopted pursuant to Section 25299.77 of the Health and Safety Code and that no further action related to the petroleum release(s) at the site is required.

This notice is issued pursuant to subdivision (h) of Section 25299.37 of the Health and Safety Code. Please contact our Office if you have any questions regarding this matter.

Sincerely,

Rajiv Bhatia, MD, MPH
Director, Occupational and Environmental Health

cc: Nancy Katyl, RWQCB
Cleanup Fund, SWRCB



September 29, 2006

GA Project No. 310-01-01

City and County of San Francisco
Department of Public Health
Local Oversight Program
1390 Market Street, Suite 210
San Francisco, CA 94102

Attention: Stephanie Cushing

Subject: Results of Groundwater Investigation
Former Ricci & Kruse Lumber Co.
1295 Yosemite Street, San Francisco, California
SF LOP Site Code 11741

Ladies and Gentlemen:

Gribi Associates is pleased to provide this letter report documenting the results of a groundwater investigation at the former Ricci & Kruse Lumber Company site at 1295 Yosemite Street in San Francisco, California (see Figure 1 and Figure 2). In accordance with the work plan approved by City and County of San Francisco Department of Public Health (SFDPH), eight soil borings were drilled and groundwater samples collected on September 5, 2006. The goal of the investigation was to provide additional assessment of soil and groundwater impacts in an expected downgradient (east) groundwater flow direction from the former USTs. Note that, although the approved workplan proposed collection of both soil and grab groundwater samples, we were notified in the field by Ms. Stephani Cushing of SFDPH that collection of soil samples would not be required, since groundwater was so shallow (3.5 feet in depth), precluding the possibility of significant vadose zone soil hydrocarbon impacts.

SITE BACKGROUND

The site is located in an industrial area of southeast San Francisco (see Figure 1 and Figure 2). The site is bordered on the northeast by the South Basin Inlet, which is tidally influenced and which drains southeast to San Francisco Bay. The site, which includes almost two city blocks, is occupied by several commercial/industrial tenants, including Bay Area Metals, Pacific Diamond Charters, Multeen Transportation, Scene 2, Bay Area Repair, Ace Roofing, Ranger Pipelines, Higgins Trucking, and Alpine Construction.

We have reviewed various documents for the site supplied by Mr. Reginald Ricci. Copies of selected portions of these documents are included in Attachment A. These documents indicate the following:

- **UST-Related Documents.** Mr. Ricci provided: (1) A copy of contract between Standard Oil and Ricci & Kruse Lumber dated August 15, 1955 documenting the purchase of one 1,000-gallon gasoline underground tank (UST) ("north UST") located at "Hawes and Yosemite Avenue"; (2) An approved tank removal permit dated May 5, 1986 for one 1,000-gallon gasoline UST located 5 feet south from the intersection of Hawes Street and Yosemite Avenue and one 2,000-gallon gasoline UST ("south UST") located 80 feet south from the intersection of Hawes Street and Yosemite Avenue; (3) A report dated June 11, 1986 from Harding Lawson Associates (HLA) documenting the removal and sampling of the two site USTs and including a site plan showing approximate UST locations; and (4) A letter from San Francisco Department of Public Health to Ricci & Kruse Lumber requesting a sampling plan for the former USTs.

The HLA report states that the north UST was a single-walled steel tank in a concrete cradle or box with brown sand and gravel backfill. Upon removal, the tank showed some scaling and corrosion, with a small hole in the tank bottom on the south end of the tank. Groundwater was present in the tank excavation at about 3.5 feet in depth, and a hydrocarbon sheen was noted on the water surface. Soils surrounding the tank consisted of variable fill that included glass, organic matter, and metal. A soil sample collected three feet below the excavation floor showed 500 parts per million (ppm) of Total Petroleum Hydrocarbons as Gasoline (TPH-G), and a water sample collected from the excavation cavity showed 88 ppm of TPH-G.

The south UST, which was apparently installed in 1983, was constructed of tar-wrapped steel. Upon removal, the tank and tar-wrapping appeared to be in good condition. Backfill surrounding the tank consisted of brown sand. Groundwater was encountered in the excavation at a depth of about 5.0 feet below surface grade and exhibited a slight hydrocarbon sheen. A soil sample collected three feet below the excavation floor showed 110 ppm of TPH-G, and a groundwater sample from the excavation showed 100 ppm of TPH-G.

- **CERCLA-Related Documents.** On December 7, 1990, a CERCLA Preliminary Assessment report was issued for the project site by Ecology and Environmental, Inc. on behalf of the USEPA Region 9. According to this document, the project site previously comprised tidal flats which were landfilled between approximately 1943 and 1955. Landfilled materials on the project site probably originated for Hunters Point Naval Shipyard, and materials encountered beneath the site have included construction debris, apparent military gear, hospital materials, vehicle parts, ship parts, and drummed wastes.

Contamination was encountered beneath Armstrong Avenue in 1986 during the installation of a sewer line by the City of San Francisco Department of Public Works (SFPDW). The SFPDW subsequently contracted various investigations to assess soil and groundwater impacts. These investigations identified primarily heavy-range hydrocarbon soil and groundwater impacts near the intersection of Armstrong Avenue and Hawes Street. A groundwater sample collected from a boring located approximately

150 feet west, in an expected upgradient groundwater flow direction, from the site USTs showed 800 parts per billion of benzene.

On June 14, 1992, a CERCLA Site Inspection report was issued for the project by Ecology and Environmental, Inc. on behalf of the USEPA Region 9. The site inspection did not include any sampling, but rather summarized and evaluated previous investigative results and potential human health and environmental risks. Summary tables included in this report showed variable concentrations of hydrocarbons and metals in soils and groundwaters along both sides of South Basin Inlet. In addition, this report includes a decision stating that the site "does not qualify for future remedial site assessment under CERCLA". The basis for this decision was that: (1) Hydrocarbons and metals contamination is widespread in bay fill materials and sediments, and contaminants beneath the site have not been associated with known onsite activities; (2) Groundwater use is limited in the site vicinity; and (3) While sediments in South Basin Inlet are contaminated with hydrocarbons and metals, this contamination cannot be attributed to the project site, since there are numerous potential offsite sources. Note that, according to this report, a boring, BH6, was drilled immediately east, in an expected downgradient groundwater flow direction, from the former project site 1,000-gallon gasoline UST. A soil sample from this boring showed no detectable concentrations of TPH/BTEX constituents and background concentrations of metals.

On June 12, 2006, Gribi Associates submitted a workplan to SFDPH to conduct a soil and groundwater investigation on the site. This workplan was approved by SFDPH on July 14, 2006.

DESCRIPTION OF FIELD ACTIVITIES

In order to assess possible groundwater impacts relative to the two former site USTs, Gribi Associates drilled and sampled two soil borings in an expected downgradient (east) groundwater flow direction from each of the two former UST locations. In addition, since hydrocarbon impacts are present in upgradient fill materials, Gribi Associates also drilled two soil borings in an expected upgradient (west) groundwater flow direction from each of the former UST locations. The borings were drilled and sampled using direct-push coring equipment. Only groundwater samples were collected and submitted for laboratory analysis. All activities were conducted in accordance with applicable local, State, and Federal guidelines and statutes.

Prefield Activities

Prior to conducting drilling activities, written approval was obtained from the San Francisco Department of Public Health, Local Oversight Program. Also, a soil boring installation permit was obtained from and 72-hour notification was given to the San Francisco Bureau of Environmental Management. A copy of the permit is provided as Attachment B.

Prior to initiating drilling activities, Proposed boring locations were marked with white paint, and Underground Services Alert (USA) was notified at least 48 hours prior to drilling. Also, a Site Safety Plan was prepared, and a tailgate safety meeting was conducted with all site workers.

Location of Borings

Soil boring locations, B-1 through B-8, are shown on Figure 3. In order to assess possible hydrocarbon impacts, a total of eight soil borings were drilled, with two upgradient (west) borings and two downgradient (east) from each of the two former UST locations. For the former north UST, borings B-1 and B-2 were located upgradient from the former tank, and borings B-3 and B-4 were located downgradient from the former tank. For the former south UST, borings B-5 and B-6 were located upgradient from the former tank, and borings B-7 and B-8 were located downgradient from the former tank.

Drilling and Sampling of Investigative Soil Borings

The eight borings were drilled to a depth of about eight feet below surface grade using direct-push hydraulically-driven soil coring equipment. Under normal conditions, this coring system allows for the retrieval of almost continuous soil cores, which are contained in a clear plastic acetate tube, nested inside a stainless steel core barrel. However, due to the presence of fill material beneath the site, minimal core recovery was realized for several of the borings, resulting in difficulty in collecting soil samples. For recovered cores, after the core barrel was brought to the surface and exposed, the core was examined, logged, and field screened for hydrocarbons by a qualified Gribi Associates scientist using sight and smell. Due to the lack of significant recovery in several of the borings, soil samples were not collected, with concurrence from Ms. Stephanie Cushing of SFDPH.

Upon reaching total depth, 3/4 inch diameter Schedule 40 PVC well casing was placed in each boring, with 0.01-inch slotted well screen from about eight feet to three feet in depth, followed by blank well casing to above surface grade. Grab groundwater samples will then be collected from each of the borings using the clean stainless steel bailer as follows: (1) Laboratory-supplied containers were completely filled directly from the bailer with a minimum of agitation; (2) After making sure that no air bubbles are present, each container will then be tightly sealed with a Teflon-lined septum; and (3) Each container will then be labeled and placed in cold storage for transport to the analytical laboratory under formal chain-of-custody. All sampling equipment was thoroughly cleaned and decontaminated between each sample collection by triple rinsing first with water, then with dilute tri-sodium phosphate solution, and finally with distilled water, as described above.

Following completion of drilling and sampling activities, the eight investigative borings were grouted to match existing grade using a cement slurry.

Laboratory Analysis of Water Samples

One grab groundwater sample from each of the eight soil borings was analyzed for the following parameters:

USEPA 8015M Total Petroleum Hydrocarbons as Gasoline (TPH-G)
USEPA 8021B Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
USEPA 8021B Methyl-t-Butyl Ether (MTBE)

In addition, grab groundwater samples from two of the eight borings was analyzed for the following parameter:

USEPA 160.1 Total Dissolved Solids (TDS)

All analyses were conducted by Sunstar Laboratories, a California-certified analytical laboratory, with two-week turn around time on laboratory results. A summary of laboratory results are provided as Table 1. A copy of the laboratory analytical reports is provided as Attachment C.

RESULTS OF INVESTIGATION

General Subsurface Conditions

Minimal core recoveries were noted in most of the borings, probably due to the presence of fill soils and to the shallowness of groundwater beneath the site. In borings with some recoveries (B-1, B-4, and B-6), soils consisted of dark grey gravelly sands with some swampy odors in the soils. Groundwater was encountered in all the borings at approximately 3.5 feet in depth.

Note that in boring B-6, brown sands were encountered from surface to four feet in depth, indicating possible backfill material.

Soil and groundwater samples from the eight borings exhibited no significant hydrocarbon odors or sheens.

Groundwater Laboratory Results

Four borings, B-1 through B-4, were drilled and sampled adjacent to the former north UST. Groundwater laboratory analytical results from the four borings showed minor levels of gasoline-range hydrocarbons at each boring location, with concentrations of TPH-g ranging from 130 ppb to 280 ppb, concentrations of benzene ranging from 5.5 ppb to 19 ppb, and concentrations of MTBE ranging from 5.5 to 24 ppb. Toluene was detected in groundwater samples from borings B-3 and B-4 at concentrations of 1.6 ppb and 2.4 ppb, respectively. Total xylenes were also detected in groundwater from boring B-4 at a concentration of 2.4 ppb. In

addition, the groundwater sample collected at B-2 was also analyzed for TDS and showed a concentration of 580 ppb.

Four borings, B-5 through B-8, were drilled and sampled in the vicinity of the former south UST. Groundwater laboratory analytical results showed minor levels of gasoline-range hydrocarbons at three of the four boring locations. The groundwater sample from B-8 showed no detectable concentrations of any hydrocarbon constituents. TPH-G and benzene were detected in the three remaining borings, B-5, B-6, and B-7, at concentrations ranging from 130 ppb to 1,900 ppb TPH-G and 3.0 ppb to 18 ppb benzene. Xylenes were detected in groundwater samples from borings B-5 and B-6 at concentrations of 7.7 ppb and 5.6 ppb, respectively. Toluene was detected in groundwater from B-6 at a concentration of 1.4 ppb. Ethylbenzene was detected in groundwater from B-5 at a concentration of 6.1 ppb. In addition, the groundwater sample collected at B-7 was also analyzed for TDS and showed a concentration of 1,900 ppb.

CONCLUSIONS

Groundwater laboratory analytical results from the eight soil borings show detectable, but relatively low, concentrations of gasoline-range hydrocarbons in groundwater in both upgradient borings, B-1, B-2, B-5, and B-6, and in downgradient borings, B-3, B-4, B-7, and B-8. Since these hydrocarbon results are at least similar, if not higher, in upgradient borings relative to downgradient borings, these results do not indicate significant hydrocarbon releases from the site USTs. Rather, these low hydrocarbon concentrations are consistent with hydrocarbon levels identified during previous investigations on the site and in the site vicinity, and would seem to represent relict hydrocarbons from pre-Ricci & Kruse Lumber activities.

Groundwater hydrocarbon concentrations in the eight borings were generally below regulatory action levels, and do not appear to pose a significant environmental or human health risk. When compared with the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Environmental Screening Levels (ESLs) for protection of aqueous habitats, all hydrocarbon concentrations are below ESLs except the TPH-G results of 1,900 ppb and 990 ppb for respective borings B-5 and B-6, which are above the ESL of 500 ppb. However, these borings are upgradient from both the former south UST and from borings B-7 and B-8. TPH-G concentrations in downgradient borings B-7 and B-8 were only 130 ppb and nondetect, respectively. Thus, the TPH-G impacts in B-5 and B-6 do not appear to have originated from the site UST, and there is little expectation that hydrocarbons in upgradient borings B-5 and B-6 will ever impact the adjacent South Basin Inlet, which represents the closest potential aqueous habitat. In addition, groundwater hydrocarbon concentrations in the eight borings are significantly lower than the groundwater ESLs for the evaluation of vapor intrusion concerns. Thus, the presence of low-level hydrocarbon impacts in soil and groundwater beneath the site and in the site vicinity does not pose a significant risk for continued commercial/industrial use of the site.

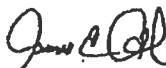
Based on the results of this investigation, which indicate the presence of low concentrations of hydrocarbons in groundwater throughout the site vicinity but no significant hydrocarbon releases from the site USTs, we recommend this site be granted regulatory site closure.

We appreciate the opportunity to present this workplan for your review. Please contact us if you have questions or require additional information.

Very truly yours,



Matthew A. Rosman
Project Engineer



James E. Gribi
Registered Geologist
California No. 5843



MAR:JEG:ct
Enclosure

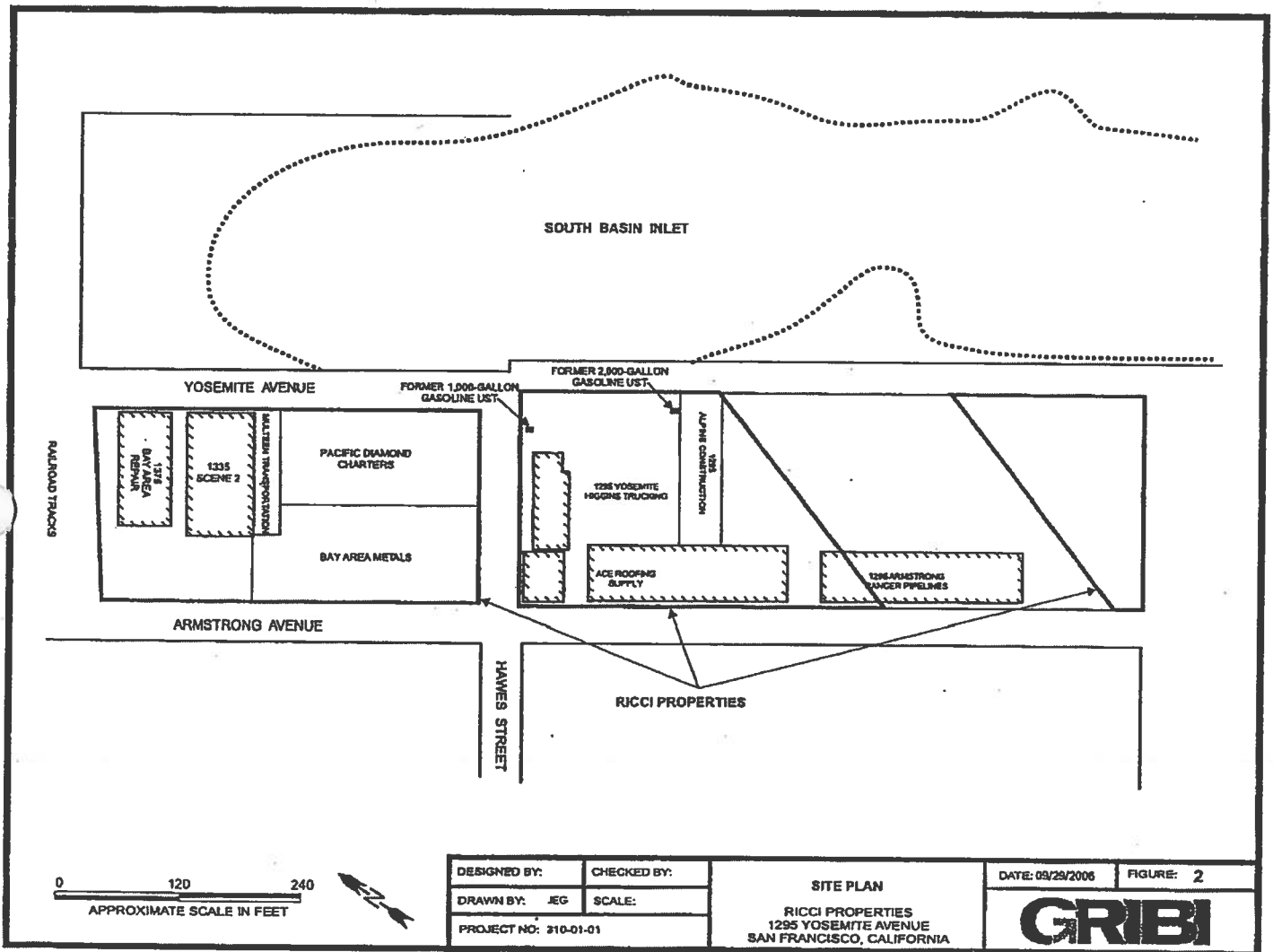
cc: Mr. Reginald Ricci, RWD Associates

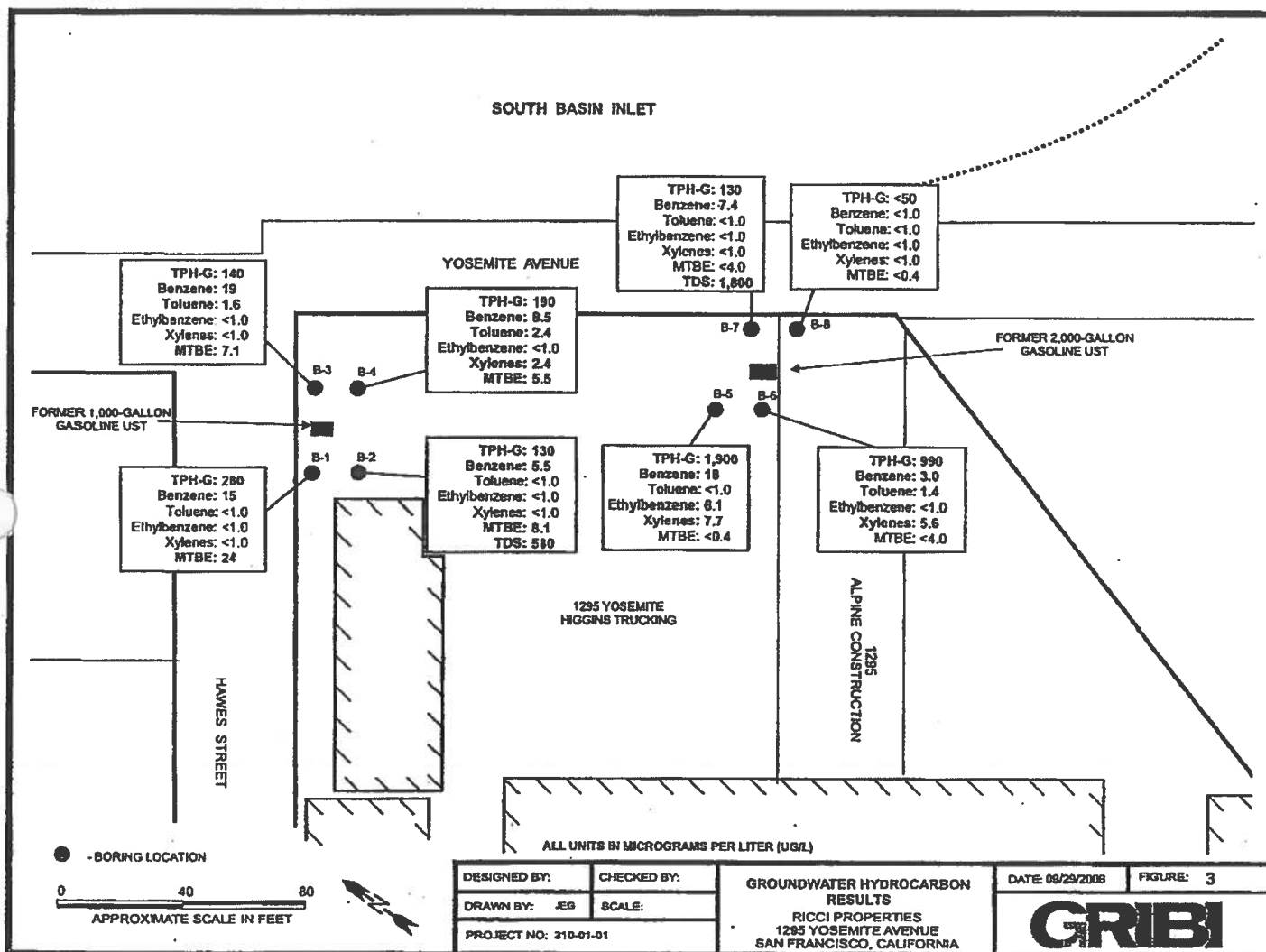
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FIGURES

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TPH-G: 140
Benzene: 19
Toluene: 1.6
Ethylbenzene: <1.0
Xylenes: <1.0
MTBE: 7.1

TPH-G: 190
Benzene: 8.5
Toluene: 2.4
Ethylbenzene: <1.0
Xylenes: 2.4
MTBE: 5.5

TPH-G: 130
Benzene: 7.4
Toluene: <1.0
Ethylbenzene: <1.0
Xylenes: <1.0
MTBE: <4.0
TDS: 1,800

TPH-G: <50
Benzene: <1.0
Toluene: <1.0
Ethylbenzene: <1.0
Xylenes: <1.0
MTBE: <0.4

TPH-G: 280
Benzene: 15
Toluene: <1.0
Ethylbenzene: <1.0
Xylenes: <1.0
MTBE: 24

TPH-G: 130
Benzene: 5.5
Toluene: <1.0
Ethylbenzene: <1.0
Xylenes: <1.0
MTBE: 8.1
TDS: 580

TPH-G: 1,900
Benzene: 18
Toluene: <1.0
Ethylbenzene: 8.1
Xylenes: 7.7
MTBE: <0.4

TPH-G: 990
Benzene: 3.0
Toluene: 1.4
Ethylbenzene: <1.0
Xylenes: 5.6
MTBE: <4.0

TABLE

GRIBI

Table 1
SUMMARY OF GROUNDWATER LABORATORY ANALYTICAL RESULTS

Ricci Property
1295 Yosemite Avenue, San Francisco, California

Sample ID	Concentrations in parts per billion (micrograms per liter)						Total Dissolved Solids
	TPH-G	Benzene	Toluene	Benz. Percent	Total Xylene	MTBE	
B-1	280	15	<1.0	<1.0	<1.0	24	NA
B-2	130	5.5	<1.0	<1.0	<1.0	8.1	580
B-3	140	19	1.6	<1.0	<1.0	7.1	NA
B-4	190	8.5	2.4	<1.0	2.4	5.5	NA
B-5	1,900	18	<1.0	6.1	7.7	<4.0	NA
B-6	990	3.0	1.4	<1.0	5.6	<4.0	NA
B-7	130	7.4	<1.0	<1.0	<1.0	<4.0	1,800
B-8	<50	<1.0	<1.0	<1.0	<1.0	<4.0	NA
ESL-AQ	500	46	130	290	100	1,800	--
ESL-VI	--	1,800	530,000	170,000	160,000	8,000	--

NOTES:

Groundwater samples were collected on September 5, 2006.

TPH-G = Total Petroleum Hydrocarbons as Gasoline

MTBE = Methyl Tert-Butyl Ether

NA = Not Analyzed

ESL-AQ= Groundwater Environmental Screening Levels (groundwater is not a current or potential drinking water resource), Aquatic Habitat Goals, as contained in *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, San Francisco Bay Regional Water Quality Control Board, Interim Final, February 2005 (Appendix 1, Tables F-1b and F-4a).

ESL-VI = Groundwater Environmental Screening Levels for Evaluation of Vapor Intrusion Concerns (Appendix 1, Table E-1a),

ATTACHMENT A
CLIENT-SUPPLIED SITE RECORDS

GRIBI

Appendix G
Map of Naval Shipyard Investigation Areas

Yosemite Ave.
Armstrong Ave.
Ingalls Ave.
Hawes St.
Griffith St.

U.S. Navy Railroad
and access road
(approximate)

SITE (approximate)
IR-1: INDUSTRIAL
LANDFILL

IR-4: SCRAP YARD
IR-5: SCRAP YARD

IR-6: SCRAP YARD

IR-3: OIL WASTE
POND

IR-2: OIL WASTE
POND

IR-1: INDUSTRIAL
LANDFILL

IR-4: SCRAP YARD
IR-5: SCRAP YARD

IR-6: SCRAP YARD

IR-3: OIL WASTE
POND

IR-2: OIL WASTE
POND

IR-1: INDUSTRIAL
LANDFILL

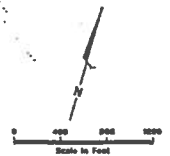
- EXPLANATION
- Area Study A
 - Area Study B
 - PCB Study Area
 - Site No. 14
 - Approximate Limits of Study A Sites
 - SCRAP YARD
 - Approximate Limits of Formerly Designated Sites
 - Existing Buildings
 - Boundary of Hunters Point Naval Shipyard
 - Approximate Limit of Bay Sediments

Reference: DODM, Appendix, 1986, Contaminated Study Venues Map, Hunters Point
Naval Shipyard (San Francisco), San Francisco, California, March 10, 1987.
Contract 140474-80-CR001, 4 Volume

HLA Harding Lawson Associates
Geographic Information
& Communications

DRAFT Site Plan
Scoping Document
Hunters Point Annex
San Francisco, California

DATE: 02/10/12/1987
BY: [Signature]
CHECKED: [Signature]
APPROVED: [Signature]



Source: Harding Lawson Associates. 1987.
Scoping Document
(San Francisco Public Library)

SOURCE MAP HUNTERS POINT		
Amen, Keith & Berg		
Job Number 9011	Date 11/89	Plate 5
Christopher M. French, R.G.		
ENVIRONMENTAL INVESTIGATION, REMEDIATION, AND RISK ASSESSMENT		

Appendix H
Tables and Figures from Yosemite Slough EE/CA
Report

Table B1 - PCBs Sediment Analytical Results
Yosemite Creek Sediment Removal Assessment
San Francisco, San Francisco County, California

Purple highlighted sample results show those in closest proximity to Subject Property.

Analyte		PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Analytical Method		8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082
ERM		180	180	180	180	180	180	180
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date							
YC-001-1	07/01/09	<15.0	<8.2	<6.0	<3.9	<2.1	<2.4	<5.4
YC-001-2	07/01/09	<13.0	<7.1	<5.1	<3.3	<1.8	<2.1	<4.6
YC-001-3	07/01/09	<19.0	<10.0	<7.6	<5.0	<2.7	<3.0	<6.9
YC-001-4	07/01/09	<21.0	<12.0	<8.7	<5.7	<3.00	300J	<7.8
YC-002-1	07/01/09	<23.0	<13.0	<9.5	<6.2	<3.30	600J	<8.6
YC-002-2	07/01/09	<17.0	<9.8	<7.1	<4.6	<2.5	7000J	4700J
YC-002-3	07/01/09	<13.0	<7.2	<5.2	<3.4	<1.80	470J	300J
YC-802-3	07/01/09	<13.0	<7.3	<5.3	<3.4	<1.8	640J	400J
YC-002-4	07/01/09	<15.0	<8.6	<6.3	<4.1	<2.2	<2.5	<5.7
YC-002-5	7/1/2009	<15.0	<8.2	<6.0	<3.9	<2.1	<2.4	<5.4
YC-003-1	06/29/09	<15.0	<8.3	<6.1	<3.9	<2.1	13000J	6600J
YC-003-2	06/29/09	<20.0	<11.0	<8.0	<5.2	<2.8	320J	180J
YC-803-2	06/29/09	<19.0	<11.0	<7.8	<5.1	<2.7	390J	<7.0
YC-003-3	06/29/09	<15.0	<8.4	<6.1	<4.0	<2.1	<2.4	<5.5
YC-003-4	06/29/09	<12.0	<6.9	<5.0	<3.3	<1.8	<2.0	<4.5
YC-003-5	06/29/09	<18.0	<10.0	<7.4	<4.8	<2.60	<3.0	<6.7
YC-004-1	07/02/09	<26.0	<15.0	<11.0	<7.0	<3.7	2300J	<9.6
YC-004-2	07/02/09	<21.0	<12.0	<8.6	<5.6	<3.0	11000J	<7.7
YC-004-3	07/02/09	<13.0	<7.4	<5.4	<3.5	<1.9	160J	<4.8
YC-005-1	07/07/09	<14.0	<8.0	<5.8	<3.8	<2.0	17000J	<5.3
YC-005-2	07/07/09	<16.0	<8.8	<6.4	<4.2	<2.2	49000J	<5.8
YC-805-2	07/07/09	<15.0	<8.6	<6.3	<4.1	<2.2	45000J	<5.6
YC-005-3	07/07/09	<13.0	<7.1	<5.1	<3.3	<1.8	1000J	<4.6
YC-005-4	07/07/09	<14.0	<7.8	<5.7	<3.7	<2.0	160J	<5.1
YC-005-5	07/07/09	<16.0	<9.0	<6.6	<4.3	<2.3	<2.6	<5.9
YC-006-1	06/29/09	<23.0	<13.0	<9.5	<6.2	<3.30	<3.8	<8.6
YC-006-2	06/29/09	<19.0	<10.0	<7.6	<4.9	<2.6	3700J	<6.8
YC-006-3	06/29/09	<14.0	<7.7	<5.6	<3.7	<2.0	<2.3	<5.1

YC-003 discussed in
PRP Attorney Letter

Table B1 - PCBs Sediment Analytical Results
Yosemite Creek Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Analytical Method		8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082
ERM		180	180	180	180	180	180	180
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date							
YC-006-4	06/29/09	<12.0	<6.9	<5.0	<3.3	<1.8	<2.0	<4.5
YC-006-5	06/29/09	<12.0	<6.8	<4.9	<3.2	<1.7	<2.0	<4.4
YC-007-1	07/07/09	<21.0	<12.0	<8.4	<5.4	<2.9	18000J	<7.5
YC-007-2	07/07/09	<13.0	<7.4	<5.4	<3.5	<1.9	2700J	2100
YC-007-3	07/07/09	<15.0	<8.5	<6.2	<4.0	<2.2	190J	<5.6
YC-807-3	07/07/09	<14.0	<7.6	<5.5	<3.6	<1.9	240J	<5.0
YC-007-4	07/07/09	<12.0	<6.7	<4.9	<3.2	<1.7	63J	<4.4
YC-007-5	07/07/09	<12.0	<6.6	<4.8	<3.1	<1.7	<1.9	<4.3
YC-008-1	07/02/09	<17.0	<9.6	<7.0	<4.6	<2.5	1000J	<6.3
YC-008-2	07/02/09	<22.0	<13.0	<9.1	<5.9	<3.2	28000J	<8.2
YC-008-3	07/02/09	<21.0	<12.0	<8.4	<5.5	<2.9	18000J	14000
YC-008-4	07/02/09	<21.0	na	na	na	na	2800J	<7.8
YC-008-5	07/02/09	<15.0	<8.6	<6.3	<4.1	<2.2	1600J	<5.6
YC-009-1	06/25/09	<22.0	<12.0	<9.0	<5.9	<3.2	<3.6	<8.1
YC-009-2	06/25/09	<17.0	<9.4	<6.8	<4.4	<2.4	960J	<6.1
YC-009-3	06/25/09	<13.0	<7.3	<5.3	<3.4	<1.8	<2.1	<4.8
YC-009-4	06/25/09	<12.0	<6.6	<4.8	<3.1	<1.7	<1.9	<4.3
YC-009-5	06/25/09	<15.0	<8.6	<6.3	<4.1	<2.2	1200J	<5.6
YC-010-1	07/09/09	<200	<110.0	<80.0	<52.0	<28.0	70000J	<72.0
YC-010-2	07/09/09	<13.0	<7.4	<5.4	<3.5	<1.9	2600J	<4.8
YC-010-3	07/09/09	<12.0	<6.9	<5.0	<3.3	<1.8	<2.0	<4.5
YC-810-3	07/09/09	<13.0	<7.4	<5.4	<3.5	<1.9	<2.2	<4.8
YC-010-4	07/09/09	<12.0	<6.7	<4.9	<3.2	<1.7	<1.9	<4.4
YC-011-1	06/25/09	<20.0	<11.0	<8.1	<5.3	<2.8	1100J	<7.3
YC-011-2	06/25/09	<91.0	<51.0	<37.0	<24.0	<13.0	7400J	<33.0
YC-811-2	06/25/09	<19.0	<11.0	<7.7	<5.0	<2.7	4700J	<6.9
YC-011-3	06/25/09	<190.0	<100.0	<76.0	<49.0	<27.0	32000J	26000
YC-011-4	06/25/09	<13.0	<7.2	<5.2	<3.4	<1.8	<2.1	<4.7
YC-011-5	06/25/09	<12.0	<6.9	<5.0	<3.3	<1.8	<2.0	<4.5
YC-012-1	06/25/09	<100.0	<59.0	<43.0	<28.0	<15.0	8700J	<38.0
YC-012-2	06/25/09	<160.0	<88.0	<64.0	<41.0	<22.0	13000J	<57.0
YC-012-3	06/25/09	<15.0	<8.2	<6.0	<3.9	<2.1	910J	<5.4
YC-012-4	06/25/09	<13.0	<7.2	<5.2	<3.4	<1.8	<2.1	<4.7

YC-008 discussed in
PRP Attorney Letter

Table B1 - PCBs Sediment Analytical Results
Yosemite Creek Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Analytical Method		8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082
ERM		180	180	180	180	180	180	180
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date							
YC-012-5	06/25/09	<12.0	<6.8	<5.0	<3.2	<1.7	<2.0	<4.5
YC-013-1	06/24/09	<18.0	<9.9	<7.2	<4.7	<2.5	3100J	2300
YC-013-2	06/24/09	<76.0	<43.0	<31.0	<20.0	<11.0	30000J	<28.0
YC-013-3	06/24/09	<12.0	<6.7	<4.9	<3.2	<1.7	2700J	<4.4
YC-013-4	06/24/09	<13.0	<7.1	<5.1	<3.3	<1.8	<2.1	<4.6
YC-813-4	06/24/09	<13.0	<7.1	<5.2	<3.4	<1.8	<2.1	<4.7
YC-013-5	06/24/09	<14.0	<7.7	<5.6	<3.7	<2.0	<2.3	<5.1
YC-014-1	06/25/09	<20.0	<11.0	<8.3	<5.4	<2.9	750J	<7.5
YC-014-2	06/25/09	<180.0	<99.0	<72.0	<47.0	<25.0	27000J	<65.0
YC-014-3	06/25/09	<14.0	<8.1	<5.9	<3.8	<2.1	1200J	<5.3
YC-014-4	06/25/09	<13.0	<7.2	<5.2	<3.4	<1.8	<2.1	<4.7
YC-814-4	06/25/09	<13.0	<7.3	<5.3	<3.4	<1.8	<2.1	<4.7
YC-014-5	06/25/09	<14.0	<7.6	<5.5	<3.6	<1.9	<2.2	<5.0
YC-015-1	07/07/09	<17.0	<9.6	<7.0	<4.5	<2.4	8500J	<6.3
YC-015-2	07/07/09	<340.0	<190.0	<140.0	<91.0	<49.0	130000J	<130.0
YC-015-3	07/07/09	<13.0	<7.3	<5.3	<3.4	<1.9	12000J	<4.8
YC-015-4	07/07/09	<13.0	<7.1	<5.1	<3.3	<1.8	300J	<4.6
YC-015-5	07/07/09	<17.0	<9.5	<6.9	<4.5	<2.4	<2.8	<6.3
YC-016-1	07/01/09	<15.0	<8.6	<6.3	<4.1	<2.2	1900J	<5.6
YC-016-2	07/01/09	<16.0	<8.8	<6.4	<4.1	<2.2	9000J	<5.7
YC-016-3	07/01/09	<14.0	<7.8	<5.6	<3.7	<2.0	500J	<5.1
YC-017-1	06/23/09	<20.0	<11.0	<8.3	<5.4	<2.9	940J	<7.5
YC-817-1	06/23/09	<20.0	<11.0	<8.1	<5.3	<2.8	2300J	<7.3
YC-017-2	06/23/09	<18.0	<10.0	<7.3	<4.7	<2.6	1500J	<6.6
YC-017-3	06/23/09	<16.0	<9.2	<6.7	<4.3	<2.3	1500J	<6.0
YC-017-4	06/23/09	<15.0	<8.2	<6.0	<3.9	<2.1	<2.4	<5.4
YC-017-5	06/23/09	<13.0	<7.3	<5.3	<3.4	<1.9	<2.1	<4.8
YC-018-1	06/23/09	<17.0	<9.4	<6.8	<4.5	<2.4	850J	<6.2
YC-018-2	06/23/09	<17.0	<9.8	<7.1	<4.6	<2.5	27000J	<6.4
YC-018-3	06/23/09	<18.0	<10.0	<7.4	<4.8	<2.6	12000J	7600J
YC-018-4	06/23/09	<17.0	<9.6	<7.0	<4.5	<2.4	4000J	3100J
YC-818-4	06/23/09	<17.0	<9.6	<7.0	<4.5	<2.4	5400J	4500J
YC-018-5	06/23/09	<15.0	<8.5	<6.2	<4.0	<2.2	880J	<5.6

Table B1 - PCBs Sediment Analytical Results
Yosemite Creek Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Analytical Method		8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082
ERM		180	180	180	180	180	180	180
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date							
YC-019-1	06/22/09	<18.0	<10.0	<7.4	<4.8	<2.6	1200J	<6.7
YC-019-2	06/22/09	<17.0	<9.8	<7.1	<4.6	<2.5	5300J	<6.4
YC-019-3	06/22/09	<16.0	<9.2	<6.7	<4.4	<2.3	1900J	<6.0
YC-019-4	06/22/09	<16.0	<8.9	<6.4	<4.2	<2.3	610J	<5.8
YC-019-5	06/22/09	<15.0	<8.6	<6.2	<4.0	<2.2	<2.5	<5.6
YC-020-1	06/22/09	<20.0	<11.0	<8.0	<5.2	<2.8	580J	<7.2
YC-820-1	06/22/09	<19.0	<11.0	<7.8	<5.1	<2.7	430J	<7.0
YC-020-2	06/22/09	<14.0	<8.1	<5.9	<3.8	<2.1	1800J	<5.3
YC-020-3	06/22/09	<18.0	<10.0	<7.4	<4.8	<2.6	3400J	<6.6
YC-020-4	06/22/09	<17.0	<9.6	<7.0	<4.5	<2.4	1500J	<6.3
YC-020-5	06/22/09	<13.0	<7.4	<5.4	<3.5	<1.9	920J	<4.9
YC-021-1	06/22/09	<15.0	<8.6	<6.2	<4.0	<2.2	750J	<5.6
YC-021-2	06/22/09	<14.0	<8.0	<5.8	<3.8	<2.0	3700J	<5.2
YC-021-3	06/22/09	<19.0	<11.0	<7.7	<5.0	<2.7	5300J	3700J
YC-021-4	06/22/09	<18.0	<10.0	<7.4	<4.8	<2.6	2300J	1800J
YC-021-5	06/22/09	<19.0	<11.0	<7.9	<5.2	<2.8	930J	<7.1
YC-022-1	06/22/09	<15.0	<8.6	<6.3	<4.1	<2.2	300J	<5.6
YC-022-2	06/22/09	<13.0	<7.4	<5.4	<3.5	<1.9	890J	<4.8
YC-022-3	06/22/09	<18.0	<10.0	<7.4	<4.8	<2.6	650J	<6.6
YC-022-4	06/22/09	<16.0	<8.8	<6.4	<4.2	<2.3	2400J	<5.8
YC-022-5	06/22/09	<15.0	<8.4	<6.1	<4.0	<2.1	2400J	<5.5
YC-023-1	06/18/09	<14.0	<7.8	<5.6	<3.7	<2.0	1500J	<5.0
YC-023-2	06/18/09	<21.0	<12.0	<8.5	<5.5	<3.0	9000J	<7.6
YC-023-3	06/18/09	<19.0	<11.0	<7.9	<5.1	<2.8	380J	<7.1
YC-023-4	06/18/09	<15.0	<8.3	<6.0	<3.9	<2.1	<2.4	<5.4
YC-023-5	06/18/09	<17.0	<9.4	<6.8	<4.4	<2.4	<2.7	<6.1
YC-823-5	06/18/09	<16.0	<9.0	<6.5	<4.2	<2.3	<2.6	<5.9
YC-024-1	06/22/09	<17.0	<9.5	<6.9	<4.5	<2.4	1400J	<6.2
YC-024-2	06/22/09	<15.0	<8.6	<6.3	<4.1	<2.2	4500J	<5.7
YC-024-3	06/22/09	<19.0	<11.0	<8.0	<5.2	<2.8	3000J	<7.2
YC-824-3	06/22/09	<19.0	<10.0	<7.6	<5.0	<2.7	4000J	<6.9
YC-024-4	06/22/09	<20.0	<11.0	<8.3	<5.4	<2.9	470J	<7.5
YC-024-5	06/22/09	<18.0	<10.0	<7.3	<4.7	<2.5	180J	<6.5

Table B1 - PCBs Sediment Analytical Results
Yosemite Creek Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Analytical Method		8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082
ERM		180	180	180	180	180	180	180
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date							
YC-025-1	06/18/09	170J	<8.4	<6.1	<4.0	<2.1	1000J	770
YC-025-2	06/18/09	<16.0	<9.1	<6.6	<4.3	<2.3	3300J	<6.0
YC-025-3	06/18/09	<19.0	<11.0	<7.7	<5.0	<2.7	2900J	<6.9
YC-825-3	06/18/09	<18.0	<10.0	<7.4	<4.8	<2.6	1200J	<6.6
YC-025-4	06/18/09	<19.0	<10.0	<7.6	<5.0	<2.7	170J	<6.9
YC-025-5	06/18/09	<18.0	<9.9	<7.2	<4.7	<2.5	94J	<6.5
YC-026-1	06/18/09	<16.0	<9.2	<6.7	<4.3	<2.3	3900J	<6.0
YC-026-2	06/18/09	<20.0	<11.0	<8.2	<5.4	<2.9	1500J	<7.4
YC-026-3	06/18/09	<21.0	<12.0	<8.7	<5.6	<3.0	360J	<7.8
YC-026-4	06/18/09	<21.0	<12.0	<8.5	<5.5	<3.0	220J	<7.7
YC-026-5	06/18/09	<17.0	<9.5	<6.9	<4.5	<2.4	<2.8	<6.2
YC-027-1	06/18/09	<15.0	<8.6	<6.3	<4.1	<2.2	3600J	<5.6
YC-027-2	06/18/09	<19.0	<11.0	<7.8	<5.0	<2.7	2700J	<7.0
YC-027-3	06/18/09	<20.0	<11.0	<8.2	<5.3	<2.9	260J	<7.4
YC-027-4	06/18/09	<17.0	<9.6	<7.0	<4.5	<2.4	<2.8	<6.3
YC-027-5	06/18/09	<17.0	<9.5	<6.9	<4.5	<2.4	<2.8	<6.2
YC-028-1	06/17/09	<17.0	<9.5	<6.9	<4.5	<2.4	120J	<6.2
YC-028-2	06/17/09	<19.0	<11.0	<7.6	<5.0	<2.7	3000J	<6.9
YC-028-3	06/17/09	<20.0	<11.0	<8.2	<5.3	<2.9	1000J	<7.4
YC-028-4	06/17/09	<20.0	<11.0	<8.3	<5.4	<2.9	1200J	<7.4
YC-028-5	06/17/09	<17.0	<9.7	<7.0	<4.6	<2.5	<2.8	<6.3
YC-029-1	07/06/09	<20.0	<11.0	<8.0	<5.2	<2.8	2200J	<7.2
YC-029-2	07/06/09	<20.0	<11.0	<8.0	<5.2	<2.8	11000J	<7.2
YC-029-3	07/06/09	<21	<12.0	<8.8	<5.7	<3.1	38000J	<7.9
YC-829-3	07/06/09	<21.0	<12.0	<8.7	<5.7	<3.1	33000J	<7.8
YC-029-4	07/06/09	<22.0	<12.0	<8.8	<5.7	<3.1	13000J	8800
YC-029-5	07/06/09	<15.0	<8.6	<6.3	<4.1	<2.2	1000J	<5.7
YC-030-1	07/06/09	<19.0	<11.0	<7.7	<5.0	<2.7	<3.1	2000
YC-030-2	07/06/09	<19.0	<11.0	<7.8	<5.0	<2.7	15000J	<7.0

Table B1 - PCBs Sediment Analytical Results
Yosemite Creek Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Analytical Method		8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082
ERM		180	180	180	180	180	180	180
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date							
YC-030-3	07/06/09	<19.0	<10.0	<7.6	<4.9	<2.7	24000J	<6.8
YC-030-4	07/06/09	<21.0	<12.0	<8.7	<5.7	<3.1	4300J	<7.8
YC-030-5	07/06/09	<17.0	<9.8	<7.1	<4.6	<2.5	780J	<6.4
YC-031-1	07/07/09	<16.0	<9.2	<6.7	<4.3	<2.3	3600J	<6.0
YC-031-2	07/07/09	<19.0	<10.0	<7.6	<4.9	<2.7	5200J	<6.8
YC-031-3	07/07/09	<15.0	<8.2	<6.0	<3.9	<2.1	2100J	<5.4
YC-831-3	07/07/09	<15.0	<8.2	<5.9	<3.9	<2.1	1300J	<5.3
YC-031-4	07/07/09	<14.0	<7.8	<5.7	<3.7	<2.0	160J	<5.1
YC-031-5	07/07/09	<13.0	<7.5	<5.4	<3.5	<1.9	<2.2	<4.9
YC-032-1	07/07/09	<19.0	<11.0	<7.9	<5.2	<2.8	30000J	<7.1
YC-032-2	07/07/09	<390.0	<220.0	<160.0	<100.0	<56.0	68000J	<140.0
YC-032-3	07/07/09	<12.0	<7.0	<5.1	<3.3	<1.8	1500J	<4.6
YC-032-4	07/07/09	<12.0	<6.7	<4.9	<3.2	<1.7	360J	<4.4
YC-032-5	07/07/09	<13.0	<7.2	<5.2	<3.4	<1.8	<2.1	<4.7
YC-033-1	07/08/09	<17.0	<9.4	<6.8	<4.4	<2.4	950J	<6.2
YC-833-1	07/08/09	<17.0	<9.5	<6.9	<4.5	<2.4	1200J	<6.3
YC-033-2	07/08/09	<15.0	<8.7	<6.3	<4.1	<2.2	4500J	<5.7
YC-033-3	07/08/09	<17.0	<9.7	<7.1	<4.6	<2.5	4900J	2800
YC-033-4	07/08/09	<18.0	<10.0	<7.5	<4.9	<2.6	4600J	<6.7
YC-033-5	07/08/09	<17.0	<9.7	<7.1	<4.6	<2.5	220J	<6.4
YC-034-1	07/08/09	<18.0	<10.0	<7.4	<4.8	<2.6	970J	<6.7
YC-034-2	07/08/09	<15.0	<8.3	<6.1	<3.9	<2.1	5100J	<5.5
YC-034-3	07/08/09	200.0	110.0	80.0	52.0	28.0	25000J	21000
YC-034-4	07/08/09	<17.0	<9.8	<7.1	<4.6	<2.5	430J	<6.4
YC-034-5	07/08/09	<16.0	<8.9	<6.5	<4.2	<2.3	42J	<5.8

Table B1 - PCBs Sediment Analytical Results
Yosemite Creek Sediment Removal Assessment
San Francisco, San Francisco County, California

Analyte		PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Analytical Method		8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082	8081A/ 8082
ERM		180	180	180	180	180	180	180
Units		ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Sample ID	Sample Date							
YC-035-1	07/08/09	<17.0	<9.5	<6.9	<4.5	<2.4	2800J	<6.2
YC-035-2	07/08/09	<19.0	<11.0	<7.8	<5.1	<2.7	9000J	<7.1
YC-035-3	07/08/09	<140.0	<78.0	<57.0	<37.0	<20.0	24000J	16000
YC-035-4	07/08/09	<15.0	<8.4	<6.1	<4.0	<2.1	2100J	1600
YC-035-5	07/08/09	<15.0	<8.2	<6.0	<3.9	<2.1	170J	<5.4
YC-036-1	07/09/09	<19.0	<11.0	<7.7	<5.0	<2.7	19000J	<6.9
YC-036-2	07/09/09	<160.0	<90.0	<65.0	<43.0	<23.0	25000J	18000
YC-036-3	07/09/09	<13.0	<7.3	<5.3	<3.5	<1.9	1000J	<4.8
YC-836-3	07/09/09	<13.0	<7.6	<5.5	<3.6	<1.9	2600J	<5.0
YC-036-4	07/09/09	<12.0	<6.8	<4.9	<3.2	<1.7	130J	<4.4

Notes:

PCBs = Polychlorinated Biphenyls

ug/kg = micrograms per kilogram

ERM = National Oceanic and Atmospheric Administration (NOAA) effects range median (ERM) levels for marine sediment (Buchman 2008, Screening Quick Reference Tables [SQUIRTs])

J = Data validation qualifier indicating concentration is estimated.

<X = not detected above method detection limit of X

na = not analyzed

Concentrations exceeding ERMs are shaded and bold.

Table 3-1. Identification of Chemicals of Potential Concern

										Ambient	COPC?		
		Units:	Count	Ds	NDs	FOD	Min	Max	95% UCL	Value	Ref	Justification	
METALS													
Aluminum	mg/kg	46	46	0	100	9,499	50,725	39,287	61,155	SFEI	No	Below ambient	
Antimony	mg/kg	16	5	11	31	2.1	9.4	3.9	NA		No	No ambient data; unlikely to be risk	
Arsenic	mg/kg	62	62	0	100	3.4	13	10	15.3	SFRWQ	No	below ambient	
Barium	mg/kg	16	16	0	100	36	720	279	NA		No	No ambient data; unlikely to be risk	
Beryllium	mg/kg	16	16	0	100	0.23	0.70	0.51	NA		No	No ambient data; unlikely to be risk	
Cadmium	mg/kg	62	61	1	98	0.36	10	3.4	0.33	SFRWQ	Yes		
Chromium	mg/kg	225	225	0	100	18	796	160	112	SFRWQ	Yes		
Cobalt	mg/kg	16	16	0	100	7	17	13	NA		No	No ambient data; unlikely to be risk	
Copper	mg/kg	62	62	0	100	15	445	138	68.1	SFRWQ	Yes		
Iron	mg/kg	46	46	0	100	15,918	52,433	40,554	63,254	SFEI	No	Below ambient	
Lead	mg/kg	225	225	0	100	2	2,800	367	43.2	SFRWQ	Yes		
Mercury	mg/kg	225	218	7	97	0	1.9	0.57	0.47	SFEI	Yes		
Molybdenum	mg/kg	16	1	15	6	--	--	--	NA		No	No ambient data; low FOD	
Nickel	mg/kg	62	62	0	100	29	160	89	112	SFRWQ	No	Below ambient	
Selenium	mg/kg	62	44	18	71	0	2.4	0.6	0.64	SFRWQ	No	At ambient	
Silver	mg/kg	62	44	18	71	0	24.8	2.0	0.58	SFRWQ	Yes		
Vanadium	mg/kg	16	16	0	100	49	99	77	NA		No	No ambient data; unlikely to be risk	
Zinc	mg/kg	225	225	0	100	21	1,490	367	158	SFRWQ	Yes		
TOTAL PETROLEUM HYDROCARBONS (TPH)													
TPH-d	mg/kg	166	137	29	83	7	5,900	429	NA		Yes	No ambient data; could be risk driver	
TPH-mo	mg/kg	163	132	31	81	17	6,100	881	NA		Yes	No ambient data; could be risk driver	
TPH-g	ug/kg	162	43	119	27	460	23,000	2,022	NA		Yes	No ambient data; could be risk driver	
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)													
Total PAHs	ug/kg	43	43	0	100	3,679	55,787	14,150	4,735	SFEI	Yes		
PESTICIDES													
Aldrin	ug/kg	46	4	42	9	0	1.8	0.6	0.4	SFEI	Yes		
Total Chlordane (4	ug/kg	209	43	166	21	4	208	17	1.1	SFRWQ	Yes		
Total DDTs	ug/kg	209	45	164	22	9	1,430	43	7.0	SFRWQ	Yes		
Dieldrin	ug/kg	209	43	166	21	4	370	20	0.4	SFRWQ	Yes		
Heptachlor	ug/kg	46	19	27	41	0	1.70	0.53	0.2	SFEI	Yes		
alpha-HCH	ug/kg	19	7	12	37	0	0.28	0.12	0.8	SFRWQ	No	Below ambient	
gamma-HCH (lindane)	ug/kg	46	8	38	17	0	0.68	0.17	0.8	SFRWQ	No	Below ambient	
POLYCHLORINATED BIPHENYLS (PCBs)													
Total PCBs (18 congeners)	ug/kg	209	197	12	94	0	34,900	3,307	26.4	SFEI	Yes		
Total PCBs (Aroclors)	ug/kg	209	173	36	83	42	130,000	11,486	26.4	SFEI	Yes		

Table 3-2. Identification of Chemicals of Concern

COPCs	Units: (all data)	Max	95% UCL	Screening Value	Ref	(2009-2012)	COC?	Justification
METALS								
Cadmium	mg/kg	10	3.4	10	ERM	--	No	95%UCL less than screening
Chromium	mg/kg	796	160	370	ERM	--	No	95%UCL less than screening
Copper	mg/kg	445	138	270	ERM	--	No	95%UCL less than screening
Lead	mg/kg	2,800	367	218	ERM	2,800	Yes	
Mercury	mg/kg	1.9	0.57	1.9	Navy Parcel F	--	No	95%UCL less than screening
Silver	mg/kg	24.8	2.0	3.7	ERM	--	No	95%UCL less than screening
Zinc	mg/kg	1,490	367	410	ERM	--	No	95%UCL less than screening
TOTAL PETROLEUM HYDROCARBONS (TPH)								
TPH-d	mg/kg	5,900	429	500	RWQCB ESL	--	No	95%UCL less than screening
TPH-mo	mg/kg	6,100	881	2,500	RWQCB ESL	--	No	95%UCL less than screening
TPH-g	ug/kg	23,000	2,022	500,000	RWQCB ESL	--	No	95%UCL less than screening
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)								
Total PAHs	ug/kg	55,787	14,150	44,792	ERM	--	No	95%UCL less than screening
PESTICIDES								
Aldrin	ug/kg	1.8	0.6	140	NOAA	--	No	95%UCL less than screening
Total Chlordane (4	ug/kg	208	17	6.0	ERM	ND	No	Recent data is ND
Total DDTs	ug/kg	1,430	43	46	ERM	--	No	95%UCL less than screening
Dieldrin	ug/kg	370	20	8	ERM	ND	No	Recent data is ND
Heptachlor	ug/kg	1.70	0.53	0.3	NOAA	ND	No	Recent data is ND
POLYCHLORINATED BIPHENYLS (PCBs)								
Total PCBs (18 congeners)	ug/kg	34,900	3,307	1,240.0	Navy Parcel F	34,900	Yes	
Total PCBs (Aroclors)	ug/kg	130,000	11,486	1,240.0	Navy Parcel F	130,000	Yes	

Table 7-1 Summary of Cost Estimates for Each Alternative

	Total Project Duration (years)	Capital Cost	Annual O&M	Periodic O&M	2012 Total Present Value of Alternative
Alternative 1					
No Action	0	\$0	\$0	\$0	\$0
Alternative 2					
Mechanical Dredging	30	\$10,830,000	\$0	\$157,000	\$10,987,000
Hydraulic Dredging	30	\$8,711,000	\$0	\$157,000	\$8,868,000
Alternative 3					
Mechanical Dredging	30	\$7,912,000	\$379,939	\$157,000	\$8,448,939
Hydraulic Dredging	30	\$5,682,000	\$379,939	\$157,000	\$6,218,939
Alternative 4					
Mechanical Dredging	30	\$6,818,000	\$379,939	\$157,000	\$7,354,939
Hydraulic Dredging	30	\$4,396,000	\$379,939	\$157,000	\$4,932,939
Alternative 5					
Mechanical Dredging	30	\$16,089,000	\$379,939	\$157,000	\$16,625,939
Hydraulic Dredging	30	\$14,085,000	\$379,939	\$157,000	\$14,621,939
Alternative 6					
Mechanical Dredging	30	\$25,321,000	\$0	\$157,000	\$25,478,000
Hydraulic Dredging	30	\$23,736,000	\$0	\$157,000	\$23,893,000
Alternative 7					
Mechanical Dredging	1	\$37,653,000	\$0	\$0	\$37,653,000
Hydraulic Dredging	1	\$37,704,000	\$0	\$0	\$37,704,000

Table 9-1. Comparative Analysis of Removal Action Alternatives

Alternative Number	Estimated Sediment Volume Removed (1)	Post-Removal AWAs		Effectiveness				Implementability		Cost (Mechanical Dredging)	Cost (Hydraulic Dredging)	Overall Score	
		Lead (mg/kg)	PCBs (ug/kg)	Long-Term Effectiveness and Protection of Human Health	Short-Term Protection of Site Ecology	Short Term Protection of Human Health	Minimization of Short Term Construction Impacts to the Local Community		Administrative (Y/N)				
		RG: 218	RG: 386										
1	0	359	5,049	N/A	Not screened further						\$0	\$0	-----
2	8,000	94	239	Moderate	High	High	High	High	Y	\$11.0M	\$8.9M	High	
3	4,200	143	499	Moderate	Moderate	Moderate	High	High	Y	\$8.4M	\$6.2M	Moderate	
4	2,500	259	793	Low	Low	Low	High	High	Y	\$7.4M	\$4.9M	Low	
5	14,400	94	239	High	High	High	Moderate	High	Y	\$16.6M	\$14.6M	High	
6	26,300	48	36	High	Moderate	Moderate	Low	High	Y	\$25.5M	\$23.9M	Moderate	
7	43,400	46	34	High	Low	Low	Low	Moderate	Y	\$37.7M	\$37.7M	Low	

(1) Alternatives 5 and 6 assume a dredge volume deeper than the assumed protective engineered cap depth of 1 foot. Therefore, cap thickness and associated dredge volumes under these alternatives may be revised during the design phase once an updated understanding of the dredge boundaries, cap properties, Site hydrodynamics, and other design parameters are established and approved by EPA.





Site Boundary



Figure 2-1
May 2011 Aerial Photograph
Yosemite Slough
San Francisco, California

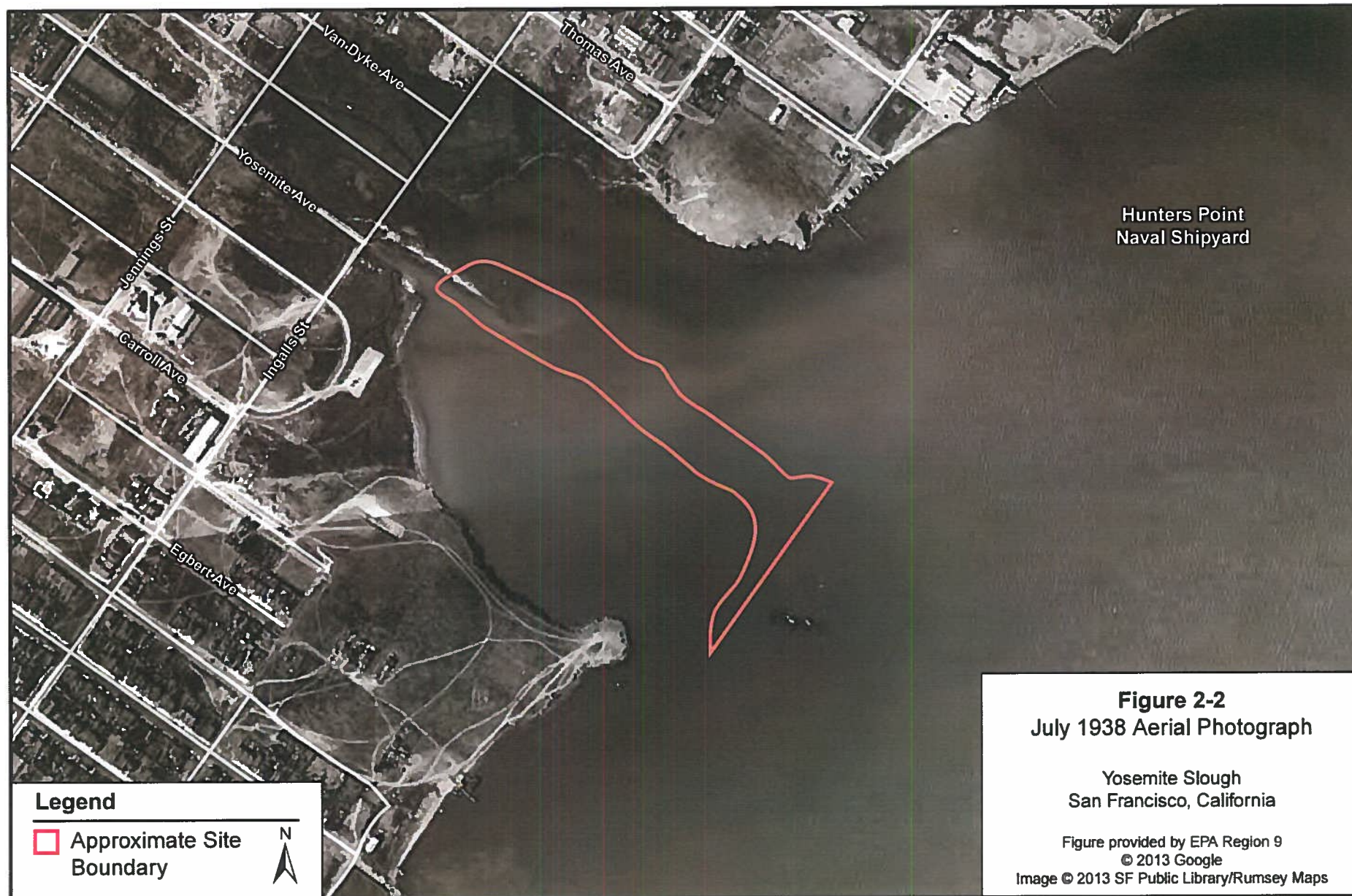


Figure 2-3
August 2012 Aerial Photograph
Yosemite Slough
San Francisco, California





Source: Aerialsondemand.com, courtesy of Top Grade Construction

Figure 2-4 Yosemite Slough Site at High Tide

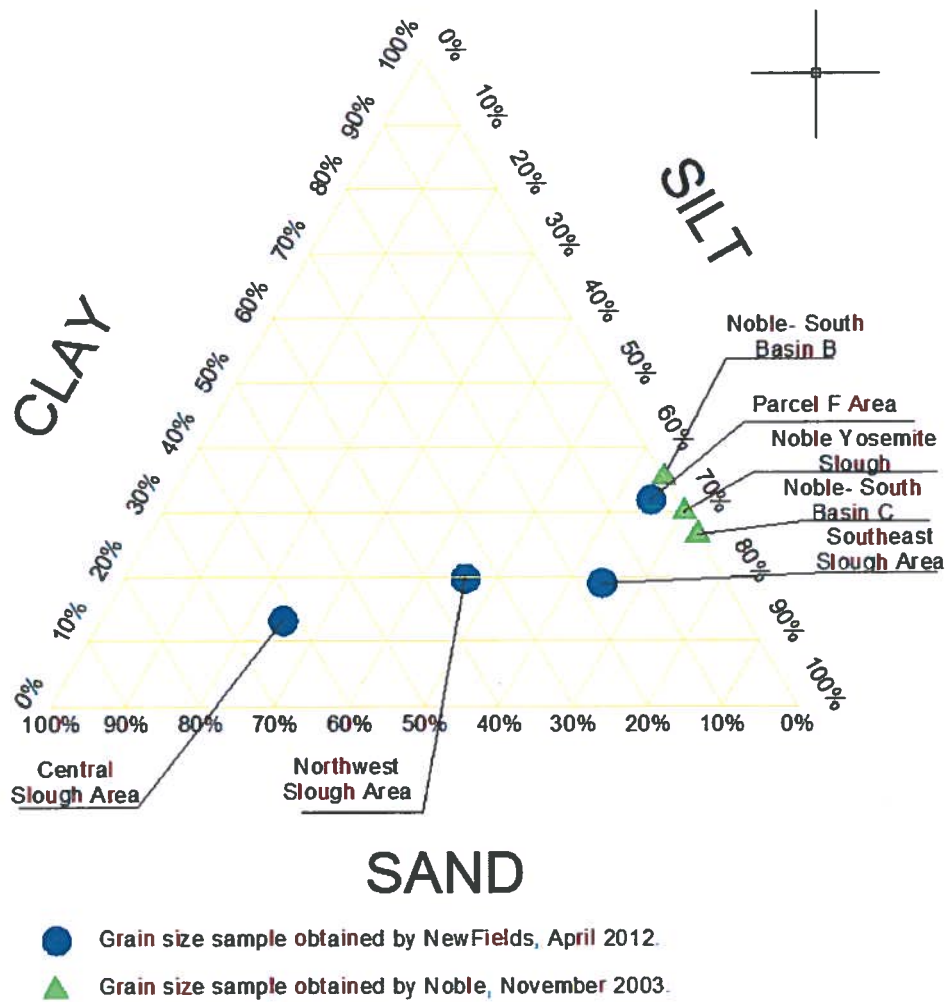


Figure 2-5 Trilinear Diagram of Sediment Textural Characteristics



Figure 2-6. CSO Features.

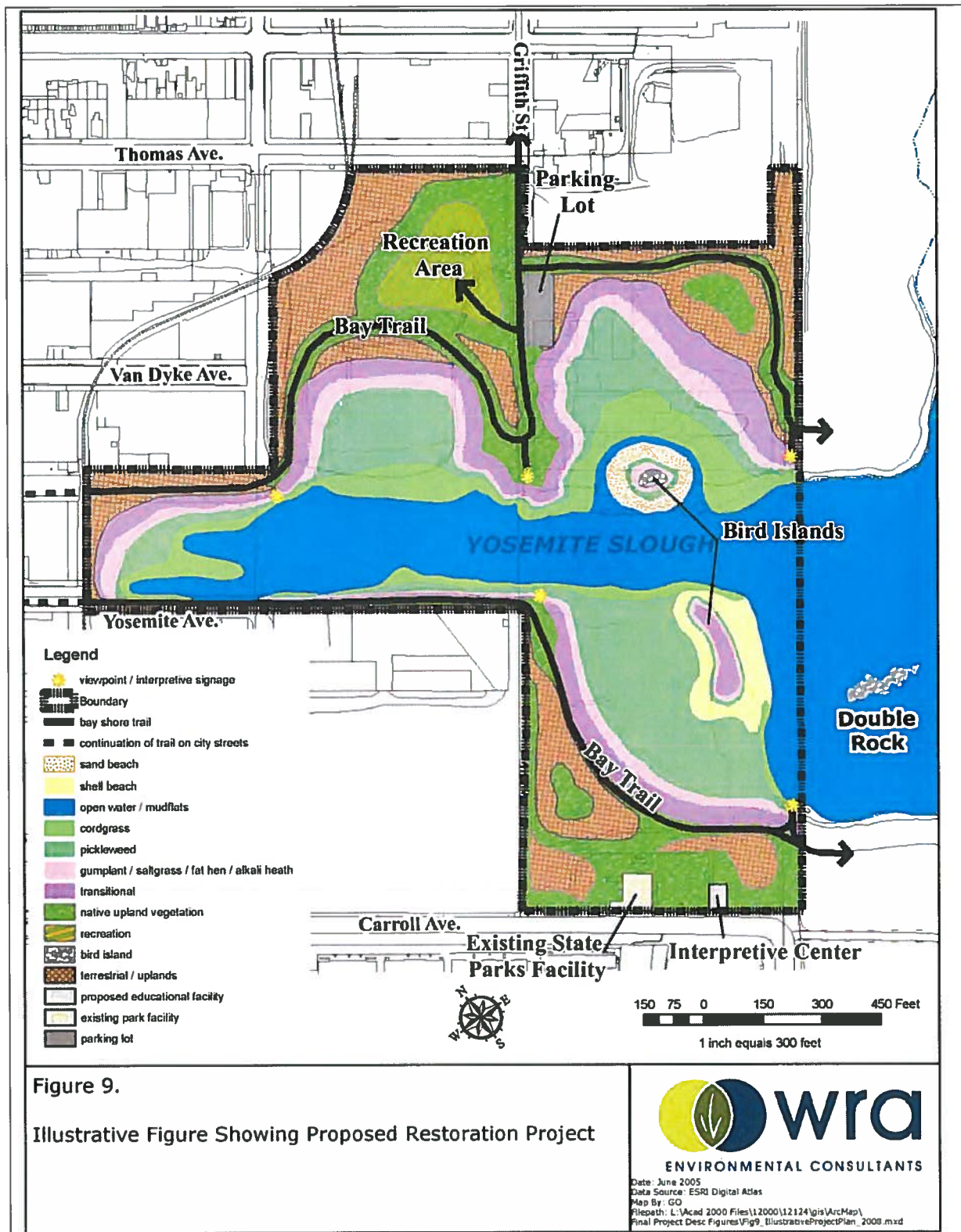


Figure 2-7. Yosemite Slough Restoration Plan (from WRA, 2006).



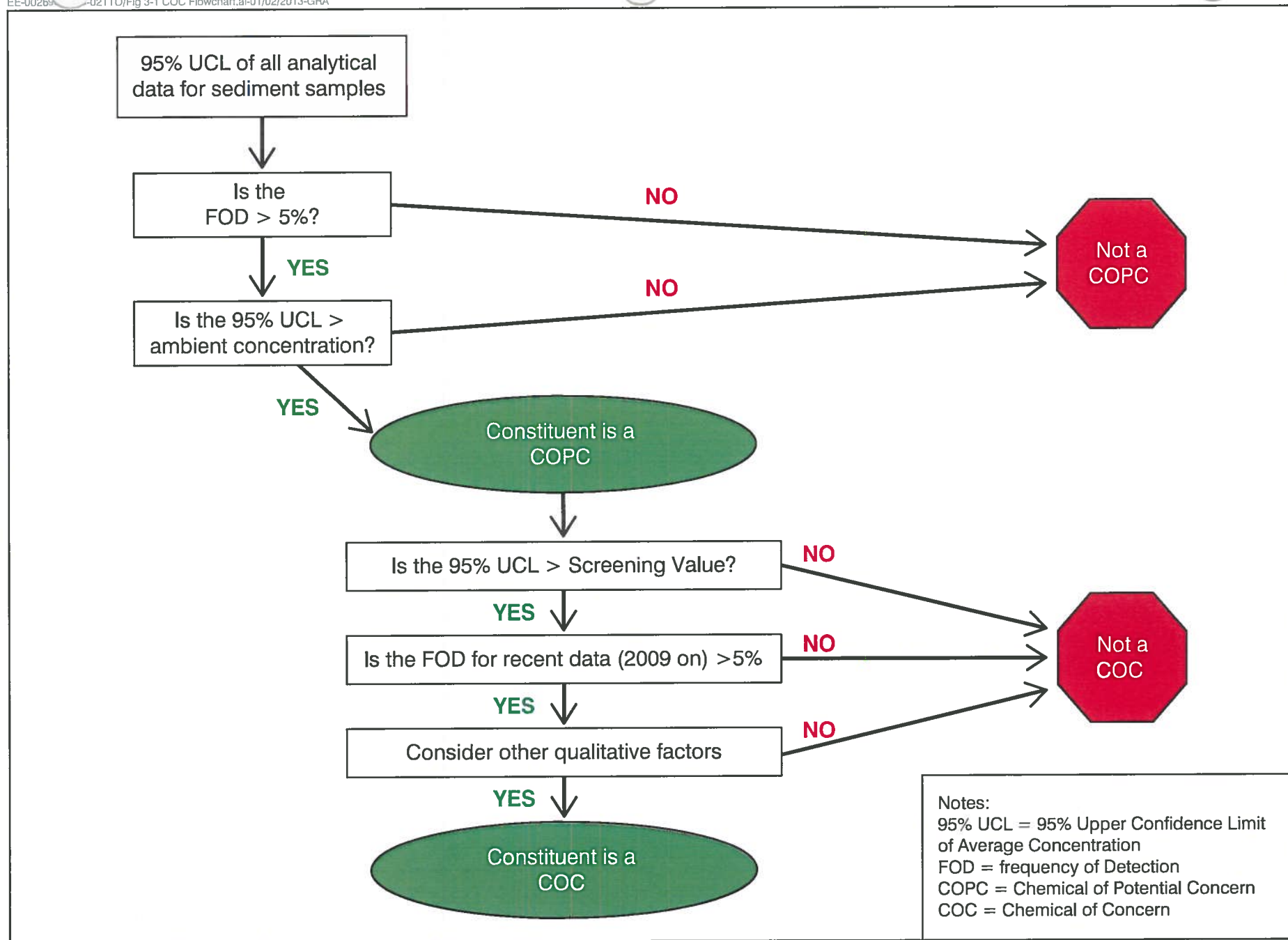
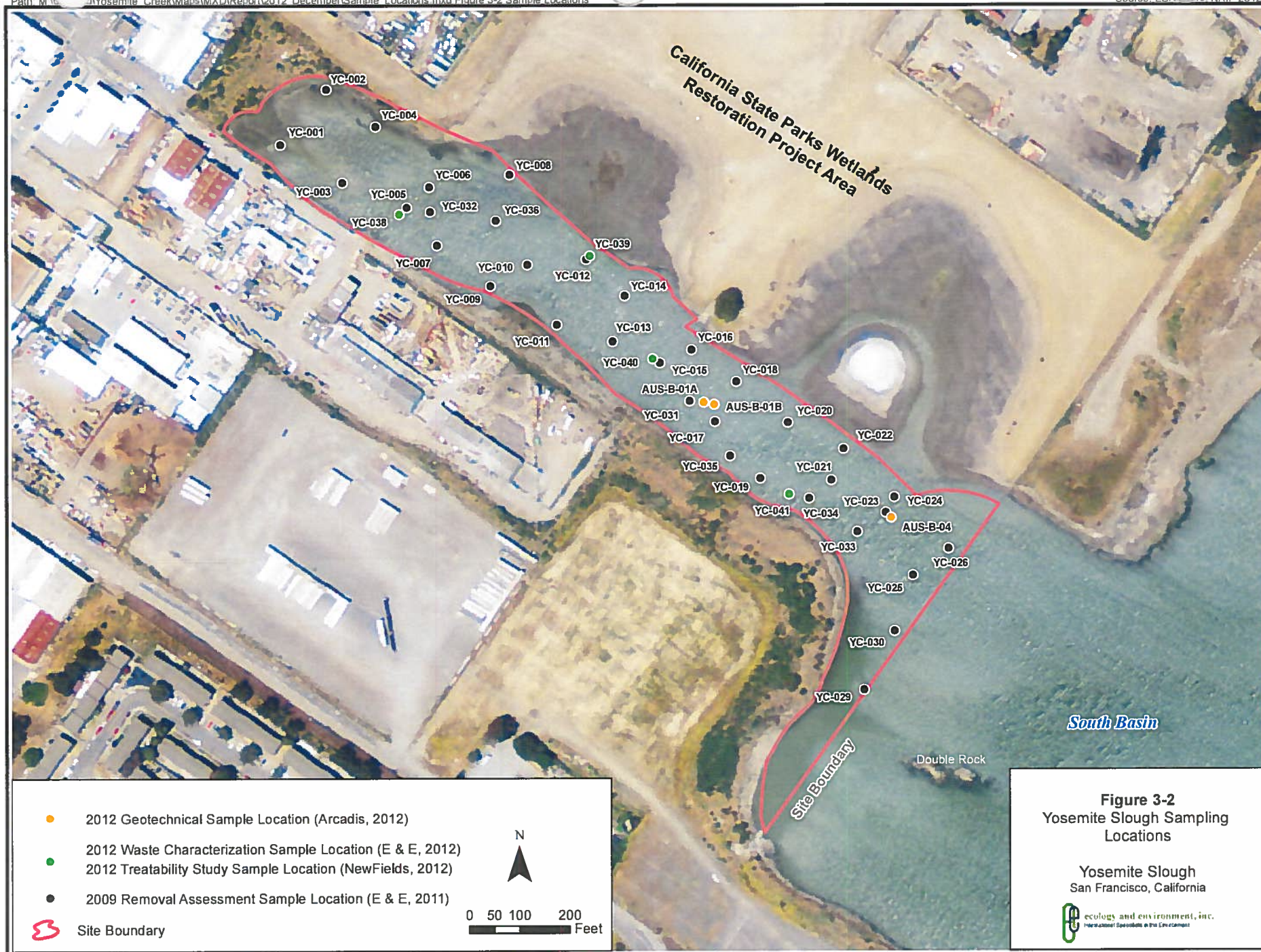
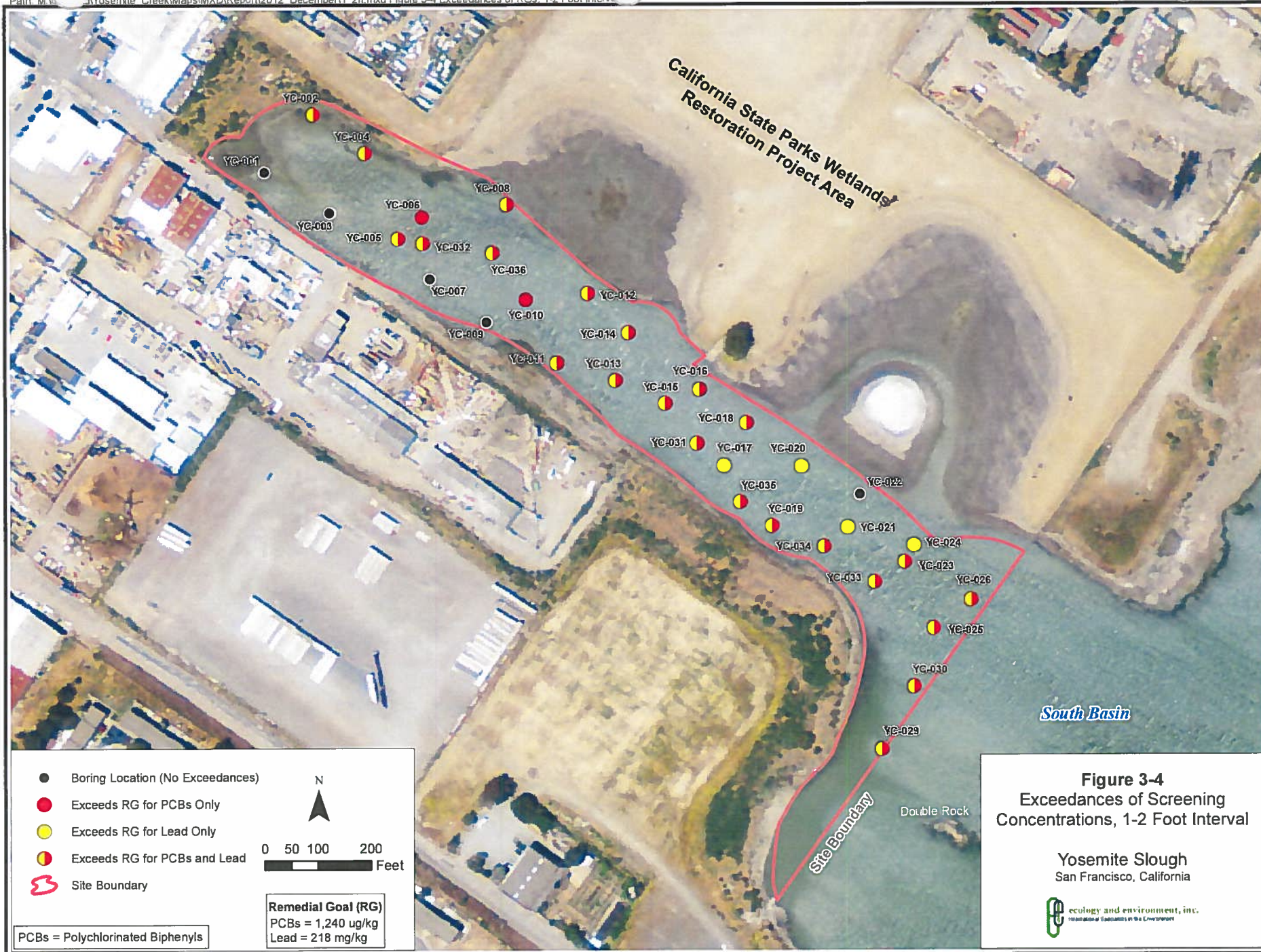
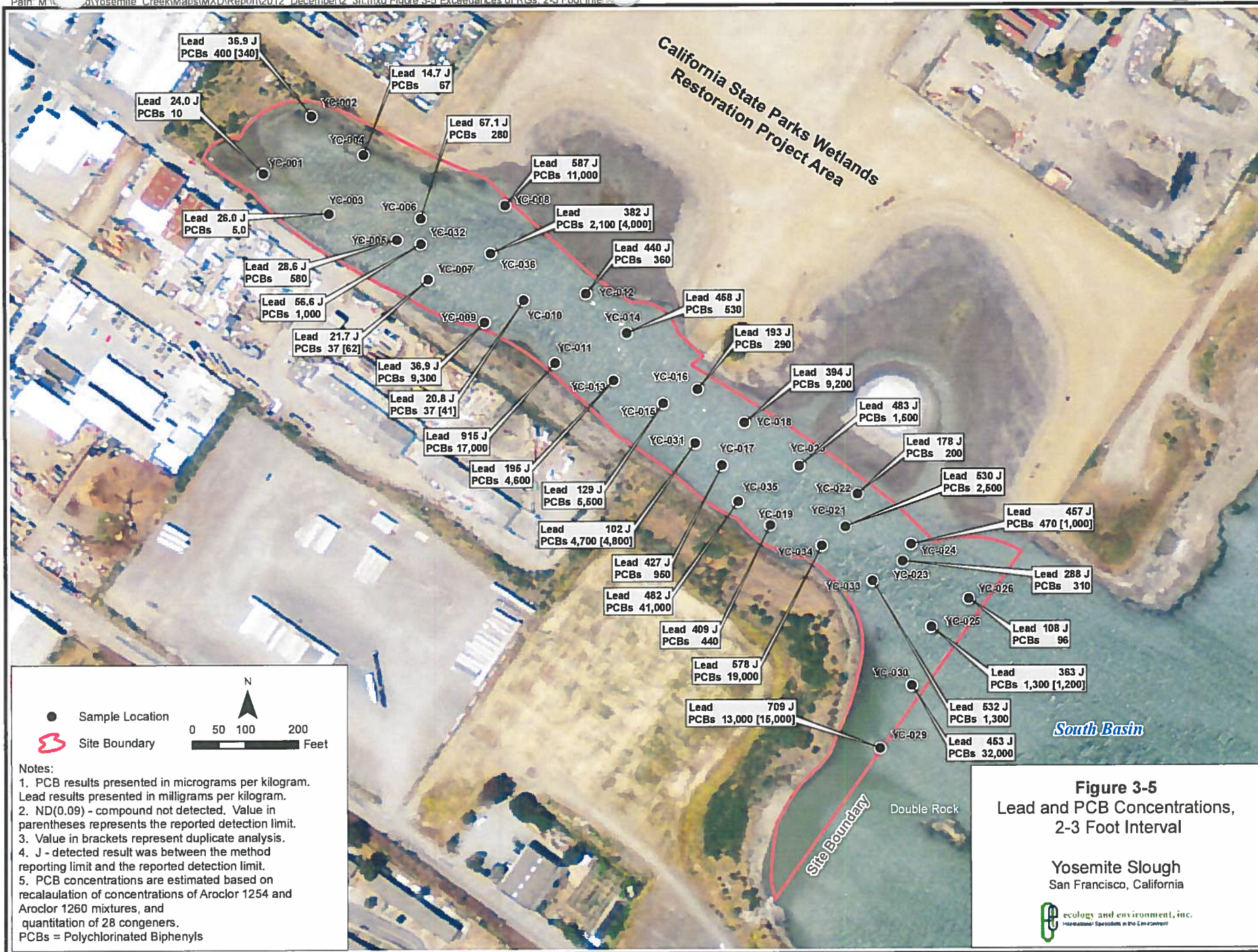


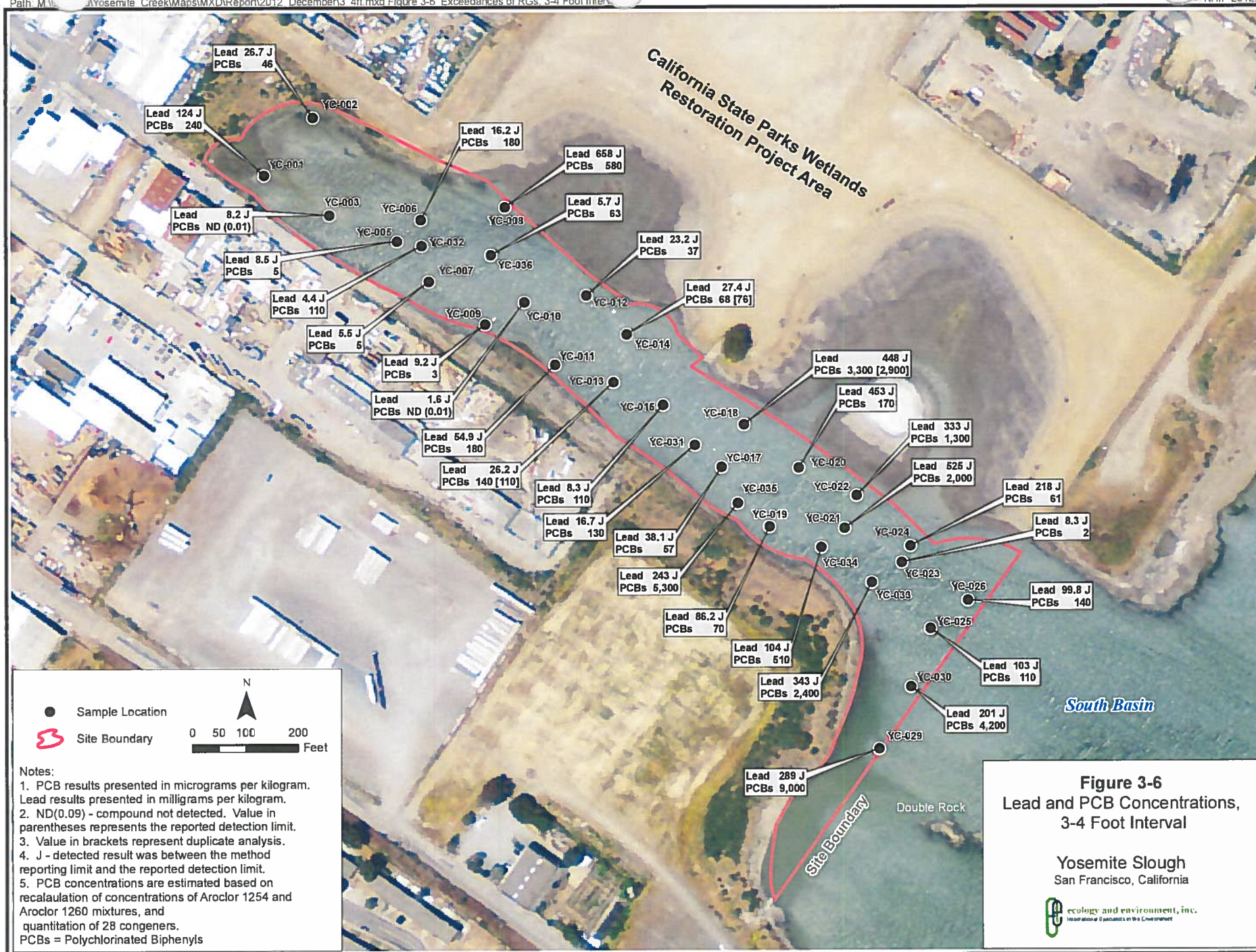
Figure 3-1 COC Flowchart

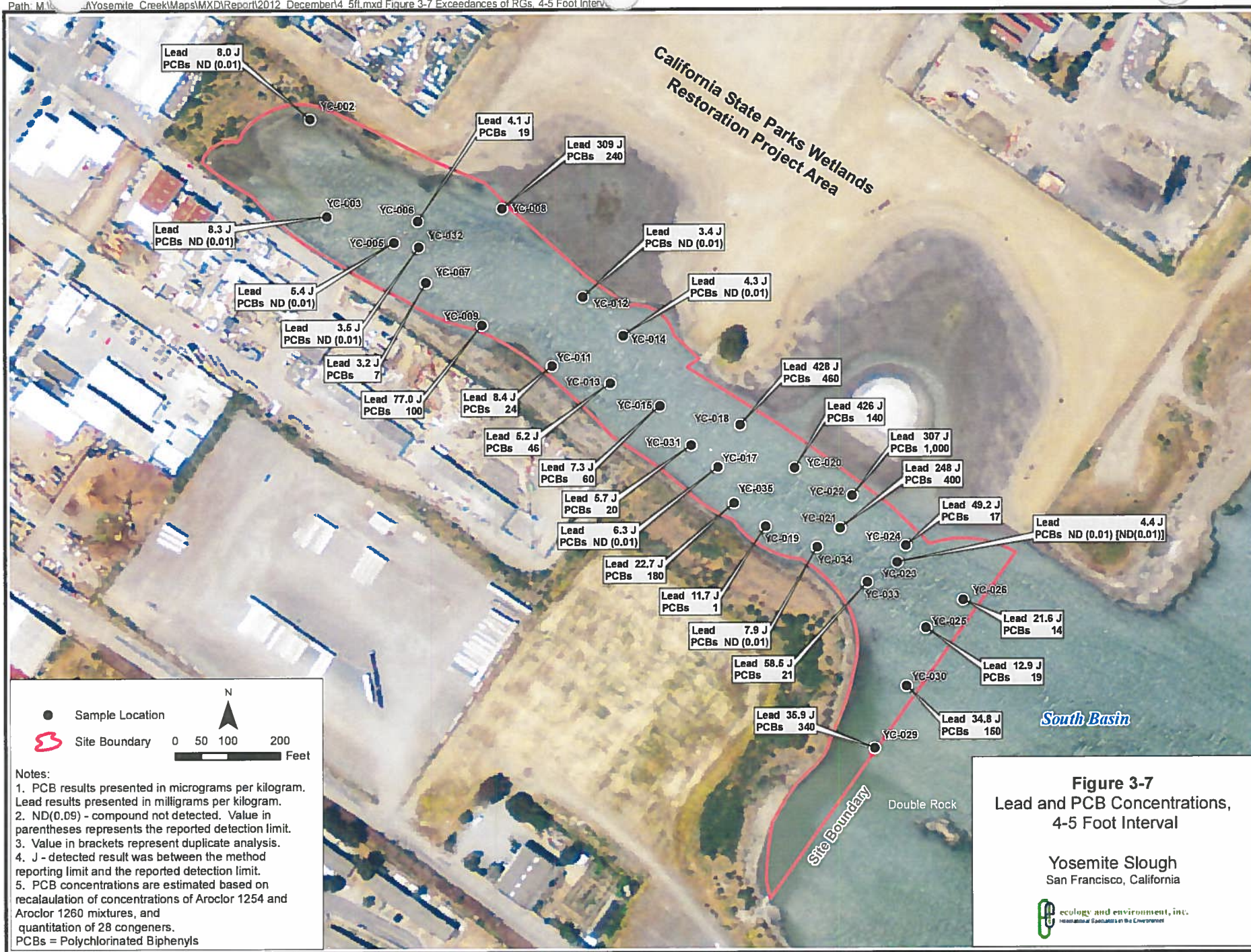












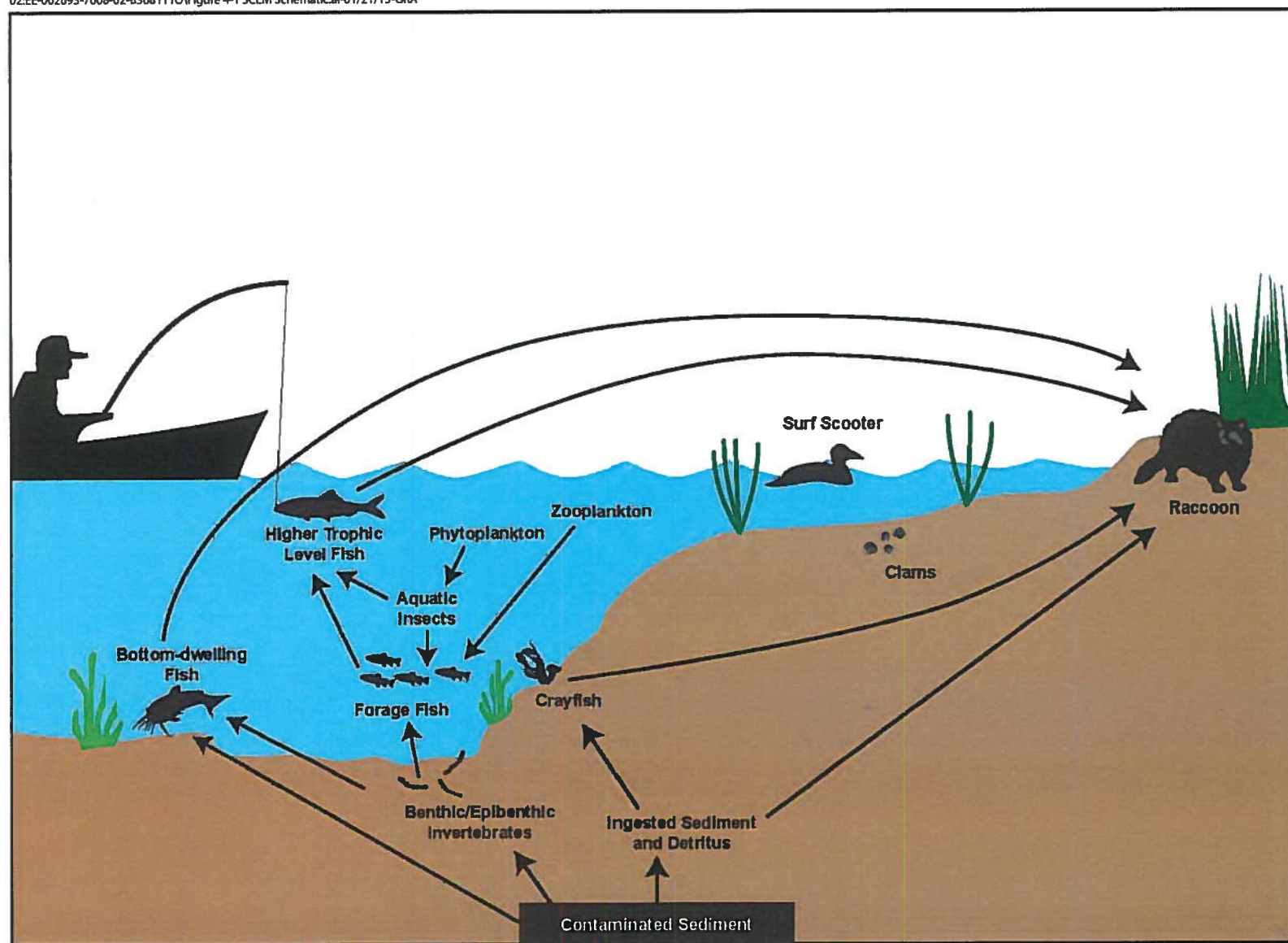


Figure 4-1 Site Conceptual Exposure Model

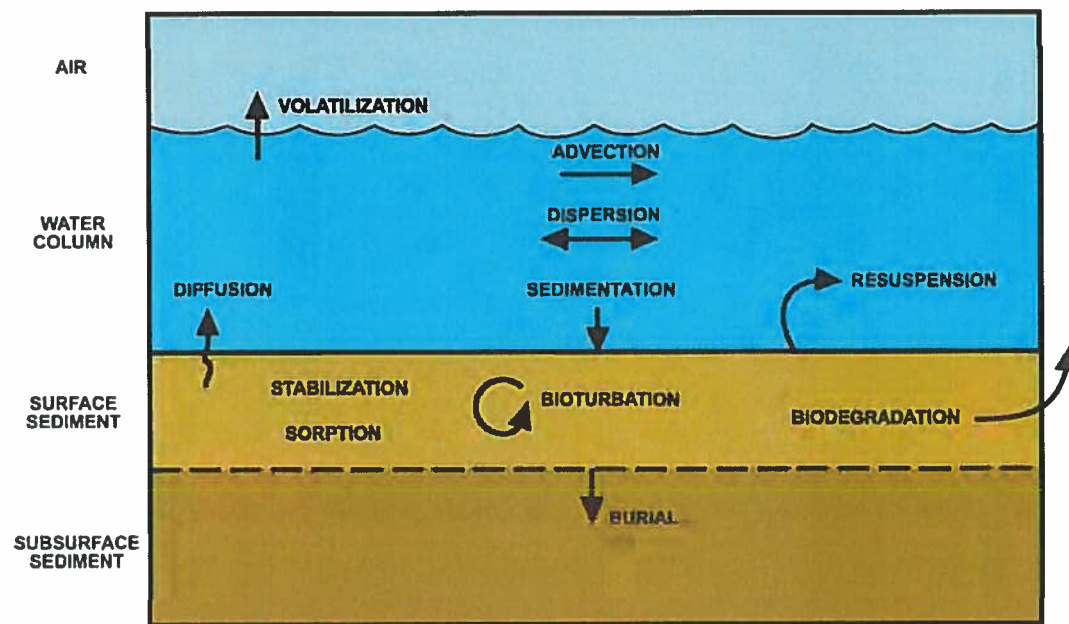


Figure 4-2. Interaction of COCs with Sediment, Water and Air Media

EPA's Three Evaluation Criteria for Superfund Removal Alternatives

1 Effectiveness

- Long-term effectiveness and protection of human health and the environment
- Short-term protection of site ecology
- Short-term protection of human health
- Minimization of short-term construction impacts to the local community
- Ability to achieve site cleanup objectives



2 Implementability

- Technical feasibility
 - » Construction and operational considerations
 - » Demonstrated performance/useful life
 - » Adaptable to environmental conditions
- Administrative feasibility
 - » Easements or right-of-ways required
 - » Impact on adjoining property
 - » Ability to impose institutional controls



3 Cost

- Capital cost
- Operation and maintenance cost



Figure 8-1. Evaluation Criteria for Removal Alternatives



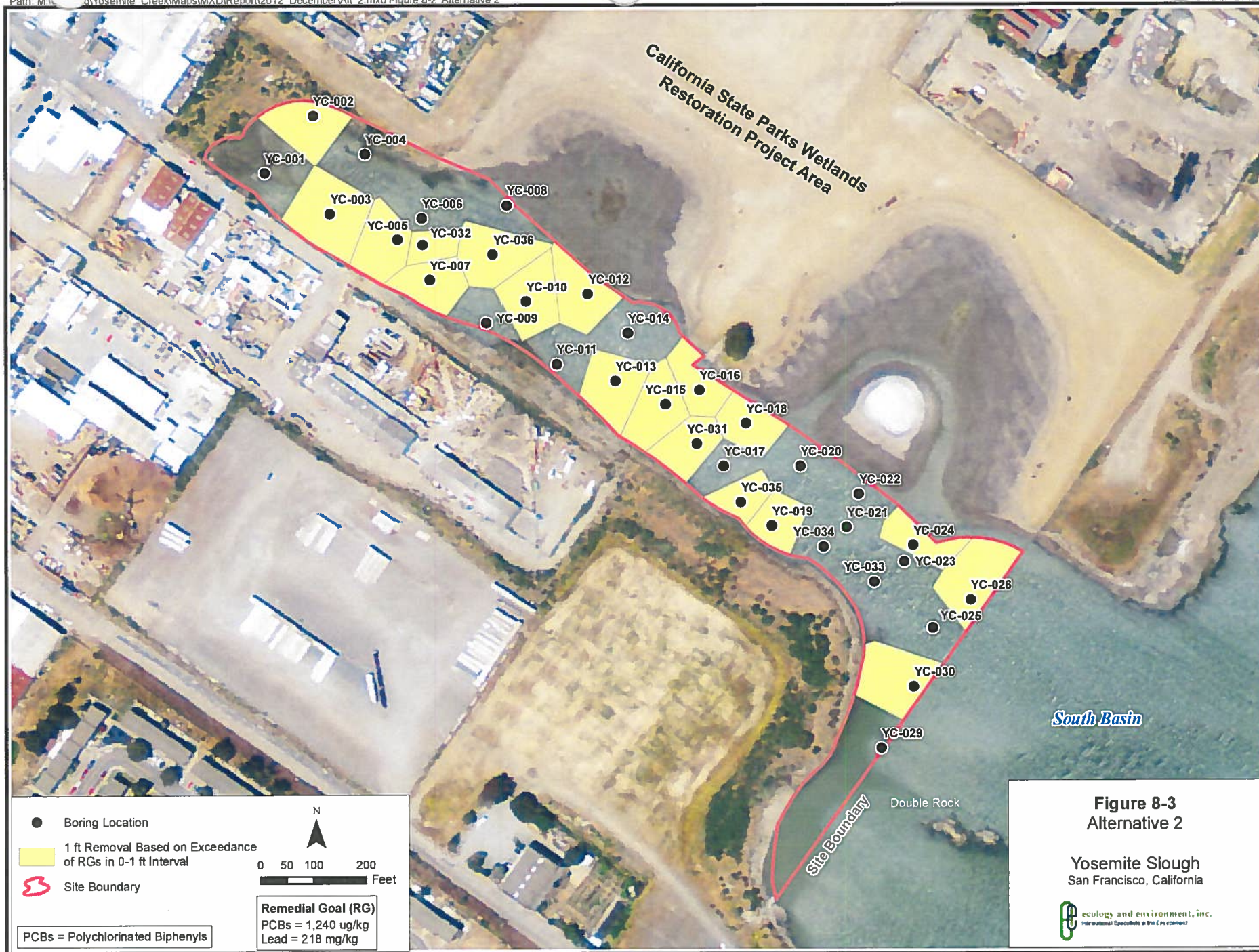


Figure 8-3
Alternative 2

Yosemite Slough
San Francisco, California



